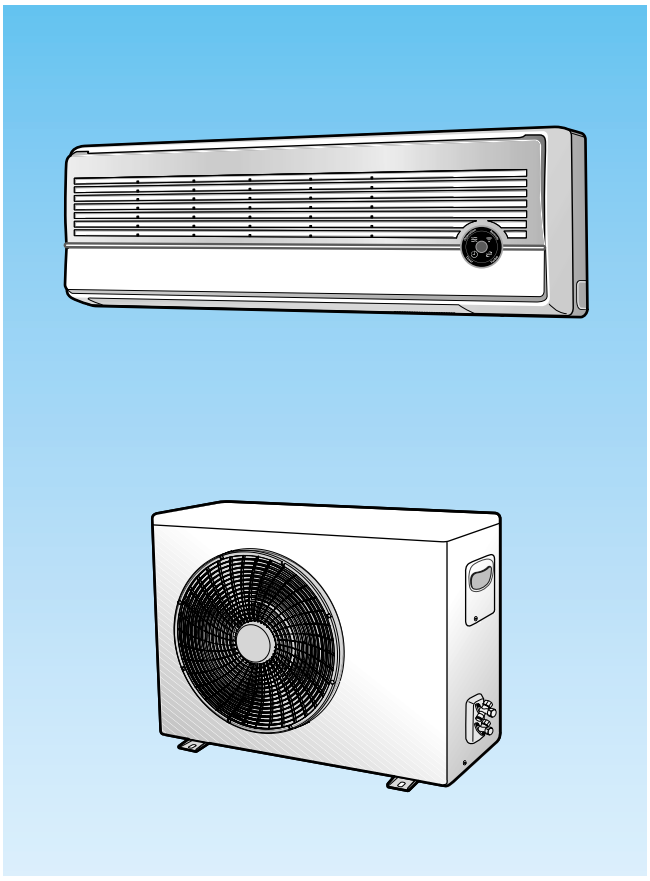
SAMSUNG

# ROOM AIR CONDITIONER

| INDOOR UNIT | OUTDOOR UNIT |
|---|---|
| SH07AS2 | SH07AS2X |
| SH07AS2A | SH07AS2AX |
| SH09AS2 | SH09AS2X |
| SH12AS4 | SH12AS4X |

# SERVICE Manual

## AIR CONDITIONER



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# 1. Product Specifications

## 1-1 Table

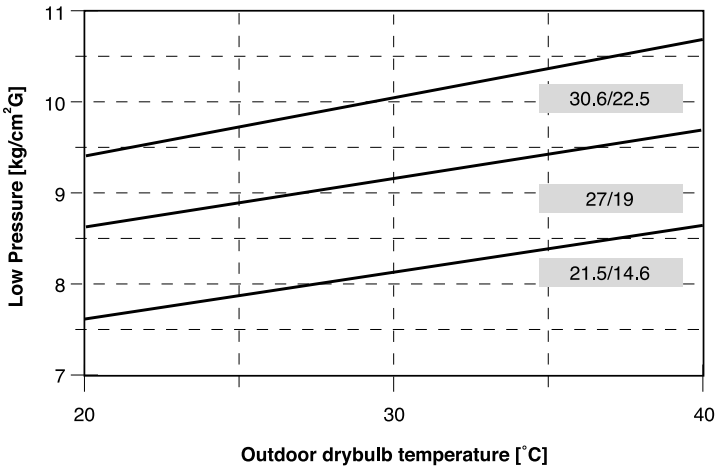
| Item | | | | Model | SH07AS2 | | SH07AS2A | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Indoor unit | Outdoor unit | Indoor unit | Outdoor unit |
| Type | | | | | Wall-mounted | | Wall-mounted | |
| Performance | Cooling | | | kW | 2.30 | | 2.30 | |
| | Heating | | | | 2.40 | | 2.40 | |
| | Dehumidifying | | | ℓ/h | 0.9 | | 0.9 | |
| | Air Volume | Cooling | | $m^3$/min | 6.2 | 19 | 6.2 | 19 |
| | | Heating | | | 6.8 | 19 | 6.8 | 19 |
| | Noise | | | dB | 36 | 50 | 36 | 50 |
| | Energy Efficiency Ratio | Cooling | | W/W | 2.95 | | 2.95 | |
| | | Heating | | | 3.24 | | 3.24 | |
| | Power | | | V-Hz | 1-220 / 240-50 | | 1-220 / 240-50 | |
| Power | Power Consumption | Cooling | | W | 780 | | 780 | |
| | | Heating | | | 740 | | 740 | |
| | Operating Current | Cooling | | A | 3.5 | | 3.5 | |
| | | Heating | | | 3.3 | | 3.3 | |
| | Power Factor | Cooling | | % | 96.9 | | 96.9 | |
| | | Heating | | | 97.5 | | 97.5 | |
| | Starting Current | | | A | 17.0 | | 17.0 | |
| | Power Cord | Length | | m | - | | - | |
| | | Number of Core Wire | | | - | | - | |
| | | Capacity | | A | 250V-10 / 16A | | 250V-10 / 16A | |
| Size | Outer Dimension | W x H x D | | mm | 795 x 258 x 179 | 660 x 495 x 235 | 795 x 258 x 179 | 660 x 495 x 235 |
| | | | | inch | 31.3 x 10.2 x 7.0 | 26.0 x 19.5 x 9.3 | 31.3 x 10.2 x 7.0 | 26.0 x 19.5 x 9.3 |
| | Weight | | | kg | 7.5 | 25.6 | 7.5 | 25.6 |
| | Refrigerant Pipe | Liquid | | mm x L(m) | ø6.35 x 7.5 | | ø6.35 x 7.5 | |
| | | GAS | | mm x L(m) | ø9.52 x 7.5 | | ø9.52 x 7.5 | |
| | Drain Hose | | | D x L(mm) | ø18 x 2,000 | | ø18 x 2,000 | |
| | Compressor | Type | | | Rotary | | Rotary | |
| | | Motor | Type | | - | - | - | - |
| | | | Rated Output | | - | - | - | - |
| | Blower | Type | | | Cross-flow | Propeller | Cross-flow | Propeller |
| | | Motor | Type | | steel | steel | steel | steel |
| | | | Rated Output | W | 11 | 20 | 11 | 20 |
| Heat Exchanger | | | | | 2ROW 10STEP | 1ROW 22STEP | 2ROW 10STEP | 1ROW 22STEP |
| Refrigerant Control Unit | | | | | CAPILLARY TUBE | | CAPILLARY TUBE | |
| Freezer Oil Capacity | | | | cc | 350 | | 350 | |
| Refrigerant to Change(R410A) | | | | g | 600 | | 600 | |
| Protection Device(OLP) | | | | | MRA99901-9201 | | RAC12126-9622 | |
| Cooling Test Condition | | | | | INDOOR UNIT : DB27˚C WB19˚C | | OUTDOOR UNIT : DB35˚C WB24˚C | |
| Maximum Operation Condition | | | | | INDOOR UNIT : DB32˚C WB23˚C | | OUTDOOR UNIT : DB43˚C WB26˚C | |

## Table(cont.)

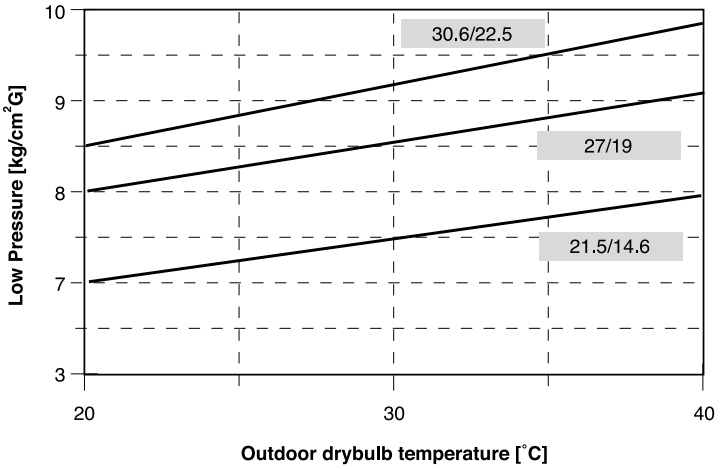
| Item | | | | Model | SH09AS2 | | SH12AS4 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Indoor unit | Outdoor unit | Indoor unit | Outdoor unit |
| Type | | | | | Wall-mounted | | Wall-mounted | |
| Performance | Cooling | | | kW | 2.70 | | 3.50 | |
| | Heating | | | | 2.90 | | 3.80 | |
| | Dehumidifying | | | ℓ/h | 1.4 | | 1.9 | |
| | Air Volume | Cooling | | $m^3$/min | 6.8 | 19 | 8.2 | 24 |
| | | Heating | | | 7.4 | 19 | 8.8 | 24 |
| | Noise | | | dB | 39 | 51 | 43 | 53 |
| | Energy Efficiency Ratio | Cooling | | W/W | 2.87 | | 2.82 | |
| | | Heating | | | 3.22 | | 3.22 | |
| | Power | | | V-Hz | 1-220 / 240-50 | | 1-220 / 240-50 | |
| Power | Power Consumption | Cooling | | W | 940 | | 1,240 | |
| | | Heating | | | 900 | | 1,180 | |
| | Operating Current | Cooling | | A | 4.2 | | 5.4 | |
| | | Heating | | | 4.0 | | 5.2 | |
| | Power Factor | Cooling | | % | 97.3 | | 99.8 | |
| | | Heating | | | 97.8 | | 98.7 | |
| | Starting Current | | | A | 21.0 | | 32.0 | |
| | Power Cord | Length | | m | - | | - | |
| | | Number of Core Wire | | | - | | - | |
| | | Capacity | | A | 250V-10 / 16A | | 250V-10 / 16A | |
| Size | Outer Dimension | W x H x D | | mm | 795 x 258 x 179 | 660 x 495 x 235 | 890 x 285 x 179 | 720 x 530 x 260 |
| | | | | inch | 31.3 x 10.2 x 7.0 | 26.0 x 19.5 x 9.3 | 35.0 x 11.2 x 7.0 | 28.3 x 20.9 x 10.2 |
| | Weight | | | kg | 7.5 | 26.3 | 8.5 | 33.0 |
| | Refrigerant Pipe | Liquid | | mm x L(m) | ø6.35 x 7.5 | | ø6.35 x 7.5 | |
| | | GAS | | mm x L(m) | ø9.52 x 7.5 | | ø12.7 x 7.5 | |
| | Drain Hose | | | D x L(mm) | ø18 x 2,000 | | ø18 x 2,000 | |
| | Compressor | Type | | | Rotary | | Rotary | |
| | | Motor | Type | | - | - | - | - |
| | | | Rated Output | | - | - | - | - |
| | Blower | Type | | | Cross-flow | Propeller | Cross-flow | Propeller |
| | | Motor | Type | | steel | steel | steel | steel |
| | | | Rated Output | W | 11 | 20 | 15 | 25 |
| Heat Exchanger | | | | | 2ROW 10STEP | 1ROW 22STEP | 2ROW 12STEP | 1ROW 24STEP |
| Refrigerant Control Unit | | | | | CAPILLARY TUBE | | CAPILLARY TUBE | |
| Freezer Oil Capacity | | | | cc | 280 | | 500 | |
| Refrigerant to Change(R410A) | | | | g | 500 | | 750 | |
| Protection Device(OLP) | | | | | RBC12131-12500 | | RBC12128-12500 | |
| Cooling Test Condition | | | | | INDOOR UNIT : DB27˚C WB19˚C | | OUTDOOR UNIT : DB35˚C WB24˚C | |
| Maximum Operation Condition | | | | | INDOOR UNIT : DB32˚C WB23˚C | | OUTDOOR UNIT : DB43˚C WB26˚C | |

## 1-2 Pressure Graph

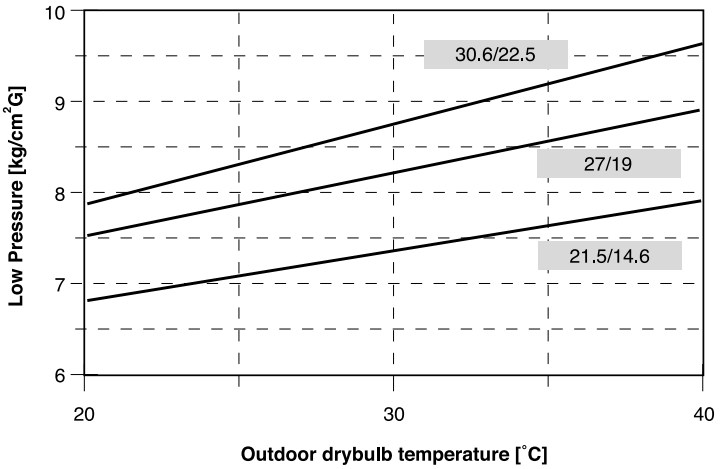
■ **SH07AS2**
**SH07AS2A**




■ **SH09AS2**

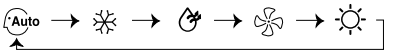
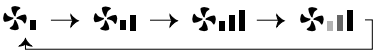



■ **SH12AS4**



# 2. Operating Instructions

## 2-1 The Feature of Key in remote control

| No | NAMED OF KEY | FUNCTION OF KEY |
|---|---|---|
| 1 | | On/Off & Timer Set/Cancel button.<br>Press the button to stop and run the air conditioner or On/Off timer set up. |
| 2 | | Mode selection button.<br>Each time you press this button,<br>Mode is changed in the following order.<br>  <br>: Auto Mode : Fan Only<br>: Cool Mode : Heat Mode<br>: Dry Mode |
| 3 | (UP) | Temperature adjustment button(UP).<br>To increase the temperature by the pressing the temperature button. |
| | (DOWN) | Temperature adjustment button(DOWN).<br>To decrease the temperature by the pressing the temperature button. |
| 4 | | Turbo/Sleep mode selection button.<br>Press the button one or more times until TURBO appears. The air conditioner cools or heats the room as quickly as possible. After 30minutes, the air conditioner is reset automatically to the previous mode. |
| | | Turbo/Sleep mode selection button.<br>Press the button one or more times until appears. The sleep timer can be used when you are cooling or heating your room to switch the air conditioner off automatically after a period of six hours. |
| 5 | | Fan speed adjustment button.<br>Each time you press this button,<br>FAN SPEED is changed in the following order.<br>  |
| 6 | | Swing button.<br>It adjusts the airflow to upward and downward. |
| 7 | | On Timer button.<br>The On Timer enables you to **switch on** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours.<br>To cancel, press the (Set/Cancel) button. |
| 8 | | Off Timer button.<br>The Off Timer enables you to **switch off** the air conditioner automatically after a given period of time that is from 30 minutes to 24 hours.<br>To cancel, press the (Set/Cancel) button. |
| 9 | | Energy Saving button.<br>If you wish to save energy when using your air conditioner, select the Energy saving mode with the button. |

## 2-1-1 Name & Function of Key in remote control

1. AUTO MODE : In this mode, operation mode(COOL, HEAT) is selected automatically by the room temperature of initial operation.

| **Room Temp** | Operation Type |
|---|---|
| **Tr≥ 21°C+ΔT** | Cool Operation (Set Temp:24˚C+ΔT) |
| **21°C +ΔT>Tr** | Heat Operation (Set Temp:22˚C+ΔT) |

   ΔT= -1°C, -2°C, 0°C, +1°C, +2°C
   ΔT is controlled by setting temperature up/down key of remote control

2. COOL MODE : The unit operates according to the difference between the setting and room temperature. (18°C~30°C)

3. HEAT MODE : The unit operates according to the difference between the setting and room temperature. (16°C~30°C)
   *Prevention against cold wind : In order to prevent the cool air from flowing out at the heat mode, the indoor fan does not operate or operates very slowly in the following cases. At this time, the indoor heat exchanger will be preheating.
   - For 3~5 minutes after the initial operation
   - For deicing operation
   - The operation of an indoor fan in accordance with the temperature of an indoor heat exchanger

| The temperature of indoor heat exchanger | Indoor fan speed |
|---|---|
| below 28˚C | off |
| 28˚C~below 34˚C | LL Speed |
| 34˚C~below 40˚C | L Speed |
| above 40˚C | Setting Speed |

   *High temperature release function : It is a function to detect an outdoor overload by the sensor of an indoor heat exchanger and to turn the outdoor fan or the compressor ON/OFF for safety.
   *Deice : Deicing operation is controlled by indoor unit's heat exchanger temperature and accumulating time of compressor's operation.
   Deice ends by sensing of the processing time by deice condition.

4. DRY MODE : Has 3 states, each determined by room temperature.
   The unit operates in DRY mode.
   *Compressor ON/OFF Time is controlled compulsorily (can not set up the fan speed, always breeze).
   *Protective function : Low temperature release. (Prevention against freeze)

5. TURBO MODE : This mode is available in AUTO, COOL, HEAT, DRY, FAN MODE.
   When this button is pressed at first, the air conditioner is operated "powerful" state for 30 minutes regardless of the set temperature, room temperature.
   When this button is pressed again, or when the operating time is 30 minutes, turbo operation mode is canceled and returned to the previous mode.
   *But, if you press the TURBO button in DRY or FAN mode that is changed with AUTO mode automatically.

6. SLEEP MODE : Sleep mode is available only in COOL or HEAT mode.
   The operation will stop after 6 hours.
   *In COOL mode : The setting temperature is automatically raised by 1°C each 1hour When the temperature has been raised by total of 2°C, that temperature is maintained.
   *In HEAT mode : The setting temperature is automatically dropped by 1°C each 1hour.
   When the temperature has been dropped by total of 2°C, that temperature is maintained.

7. FAN SPEED : Manual (3 step), Auto (4 step)
   Fan speed automatically varies depending on both the difference between setting and the room temperature.

8. COMPULSORY OPERATION :
   For operating the air conditioner without the remote control.
   *The air conditioner starts up in the most suitable mode for the room temperature:

| Room Temperature | Operating Mode | Temperature Setting |
|---|---|---|
| Less than 21˚C | Heat | 22˚C approx. |
| 21˚C or above | Cool | 24˚C approx. |

9. SWING : BLADE-H is rotated vertically by the stepping motor.
   *Swing Set : Press the button under the remote control is displayed on LCD the and the blades move up and down. If the one more time press the button, blades location is stop.

10. SETTING THE ON/OFF TIMER. :
   *ON TIMER : The On Timer enables you to switch on the air conditioner automatically after a given period of time. You can set the period of time from 30 minutes to 24 hours.
   *OFF TIMER : The Off Timer enables you to switch off the air conditioner automatically after a given period of time. You can set the period of time from 30 minutes to 24 hours.

11. SELF DIAGNOSIS

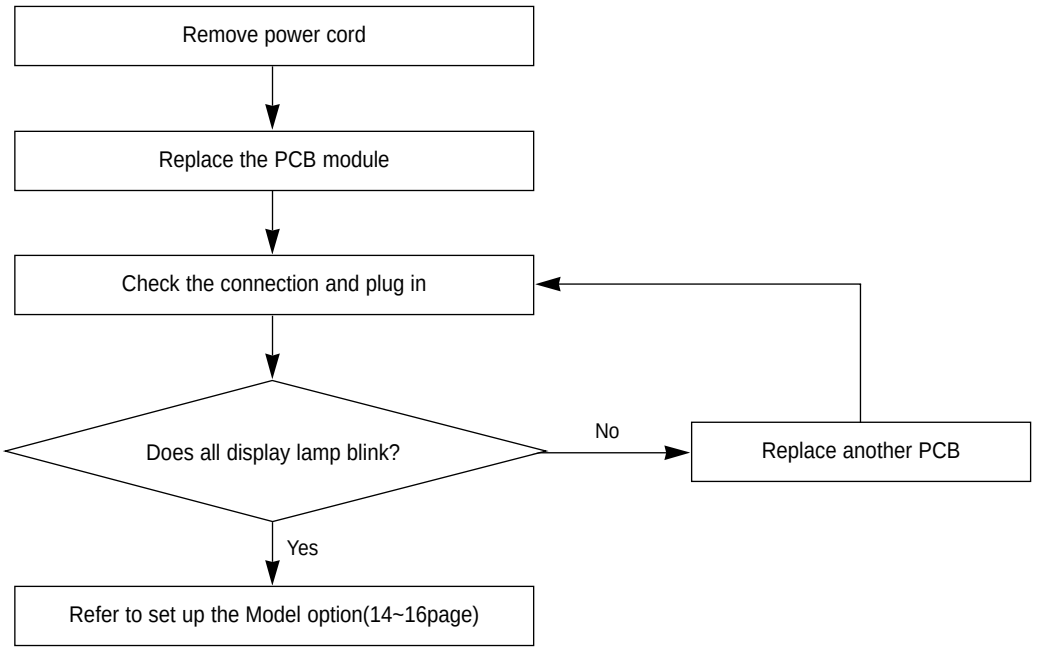
| Description | LAMP or DISPLAY Monitor | | |
|---|---|---|---|
| | OPERATION | TIMER | TURBO |
| |  |  |  |
| Indoor unit room temperature sensor error(open or short) | ○ | ◑ | ○ |
| Indoor unit heat exchanger temperature sensor error(open or short) | ◑ | ◑ | ○ |
| Indoor fan motor malfunction | ◑ | ○ | ◑ |
| EEPROM error | ○ | ◑ | ◑ |
| Option error(option wasn't set up or option data error) | ◑ | ◑ | ◑ |

○ : Lamp off ◑ : Lamp flickering

12. BUZZER SOUND : Whenever the On/Off button is pressed or whenever change occurs to the condition which is set up or select, the compulsory operation mode, buzzer is sounded "beep".

## 2-2 Replace PCB Model option

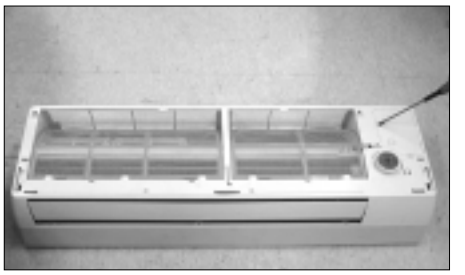
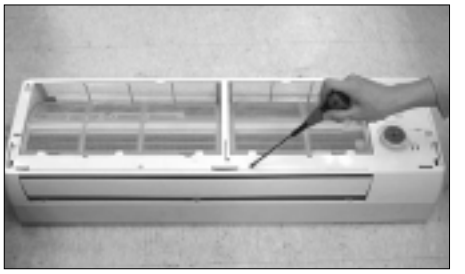
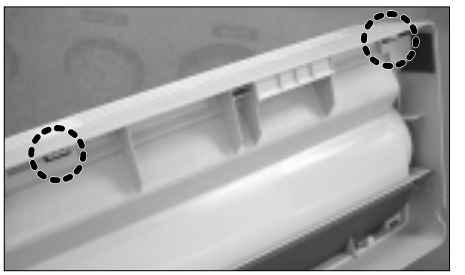
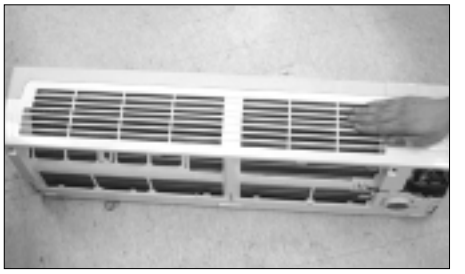
### 2-2-1 Replace PCB model option

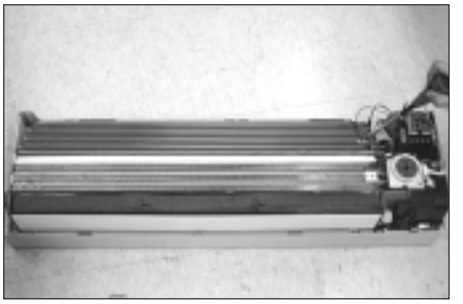
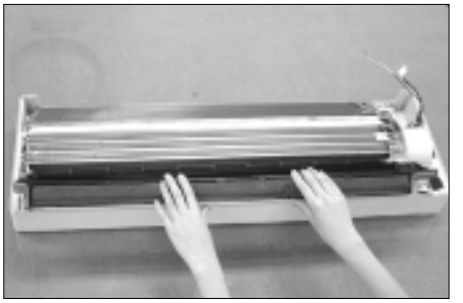
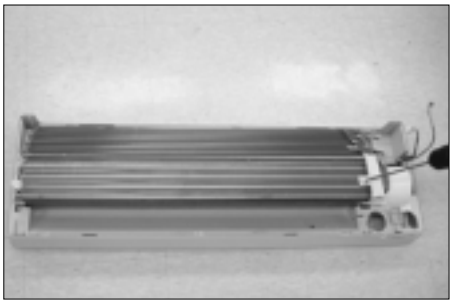
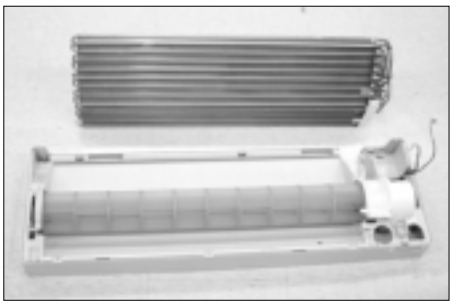


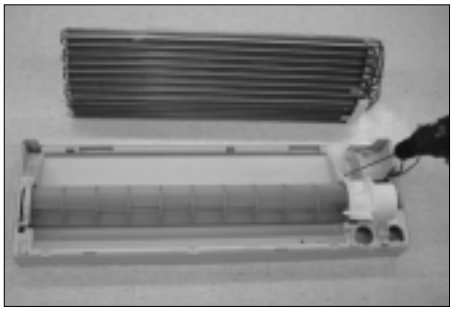
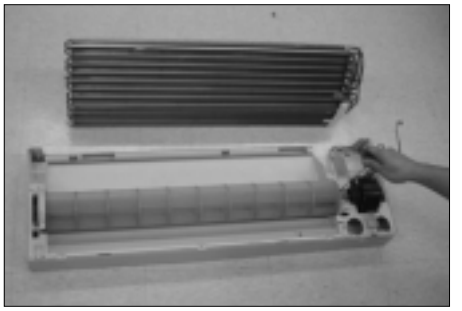
# 3. Disassembly and Reassembly

Stop operation of the air conditioner and remove the power cord before repairing the unit.

## 3-1 Indoor Unit

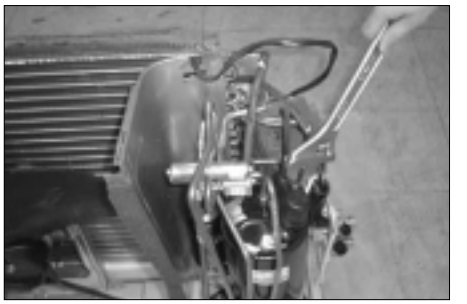
| No | Parts | Procedure | Remark |
|---|---|---|---|
| 1 | Front Panel | 1) Stop the air conditioner operation and block the main power.<br>2) Detach tape of the Front Panel upper. | |
| | | 3) Open the upper Front Grille by pulling right and left sides of the Grille.<br>4) Slide the lower Front Grille down, then disassemble it by pulling it forwards.<br>5) Take the left and right Filter out.<br>6) Loosen one of the right screw and separate the Terminal Cover.<br>7) Detach the thermistor from the Front Grille. |  |
| | | 8) Loosen 5 fixing screws of Front Grille. |  |
| | | 9) At first, press the left and center hook of the back side of the Panel Grille with the thumb to remove the hook. And press the right of the upper side of the Panel Grille with the fingers. And then disassemble the Panel Grille.<br>10) Pull the lower left and right of discharge softly for the outside cover to be pulled out. |  <br>  |

| No | Parts | Procedure | Remark |
|---|---|---|---|
| 2 | Electrical Parts (Main PCB) | 1) Take all the connector of PCB upper side out.(Including Power Cord)<br>2) Detach the outdoor unit connection wire from the Terminal Block.<br>3) If pulling the main PCB up, it will be taken out. |  |
| 3 | Tray Drain | 1) Pull Tray Drain out from the Back Body. |  |
| 4 | Heat Exchanger | 1) Loosen 2 fixing earth screws of right side.<br>2) Detach the Connection Pipe.<br>3) Detach the Holder Pipe at the rear side.<br>4) Loosen 3 fixing screws of right and left side.<br>5) Detach the Heat Exchanger from the indoor unit. |  <br> <br>  |

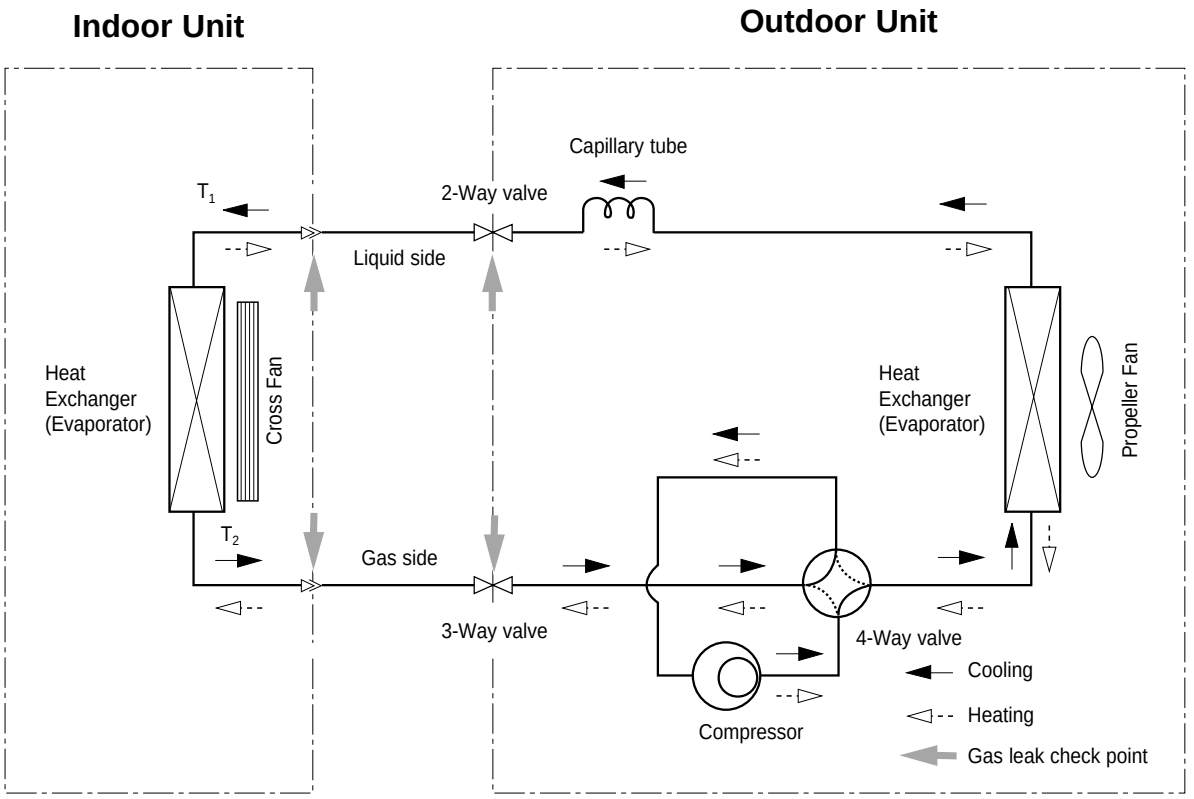
| No | Parts | Procedure | Remark |
|---|---|---|---|
| 5 | Fan Motor<br>&<br>Cross Fan | 1) Loosen 2 fixing screws and detach the Motor Holder.<br>2) Loosen 1 screw of Fan Motor. (By use of M3 wrench)<br>3) Detach the Fan Motor from the Fan. |  |
| | | 4) Detach the Fan from the left Holder Bearing. |  |

## 3-2 Outdoor Unit

| No | Parts | Procedure | Remark |
|---|---|---|---|
| 1 | Common Work | 1) Loosen 1 fixing screw and detach the Cover Terminal. | |
| | | 2) Loosen 1 fixing screw and detach the Cover Control.<br>3) Detach the connection wire from the Terminal Block. | |
| | | 4) Loosen 13 fixing screws and detach the Cabinet-Front. | |
| | | 5) Loosen 1 fixing screw of Ass'y E-part. | |
| | | 6) Loosen 4 fixing screws and detach the Cabinet-Side. | |

| No | Parts | Procedure | Remark |
|---|---|---|---|
| 2 | Fan and Motor | 1) Detach the Nut Flange (Turn to the clock-wise).<br>2) Detach the Fan.<br><br>3) Loosen 4 fixing screws to detach the Motor.<br>4) Loosen 5 fixing screws and detach the Motor Bracket from the Base. | <br> |
| 3 | Heat Exchanger | 1) Loosen 2 fixing screws of left and right side.<br>2) Disassemble the inlet and outlet pipe by welding.<br>3) Detach the Heat Exchanger. | |
| 4 | Compressor | 1) Open the Terminal Cover of Compressor and unscrew the Connection Terminal.<br>2) Disassemble the inlet and outlet pipe of Compressor by welding.<br>3) Loosen 3 bolts of the lower part.<br>4) Detach the Compressor. |  <br> |

# 4. Refrigerating Cycle Diagram



# 5. Set Up the Model Option

## 5-1 Setting Option Setup Method

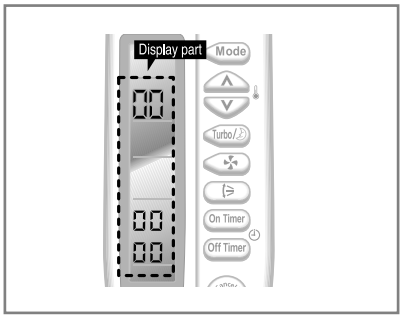
**ex) Option No. :** 067024-17A362

**Step 1** : **Enter the Option Setup mode.**

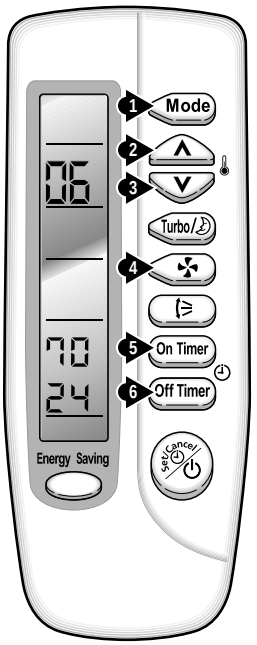
1st Take out the batteries of remote control.

2nd Press the temperature button simultaneously and insert the battery again.

3rd Make sure the remocon display shown as 00 00 00 .




**Step 2** : **Enter the Option Setup mode and select your option according to the following procedure.**




✳ Setting is not required if you must 0 a value which has a 0 default.

**1**

The default value is 00 00 00 .
Otherwise, push the Mode button to 0 .
Every time you push the button, the display panel reads 1 or 0 repeatedly.

**2**

Push the button to set the display panel to 6 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**3**

Push the button to set the display panel to 7 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**4**

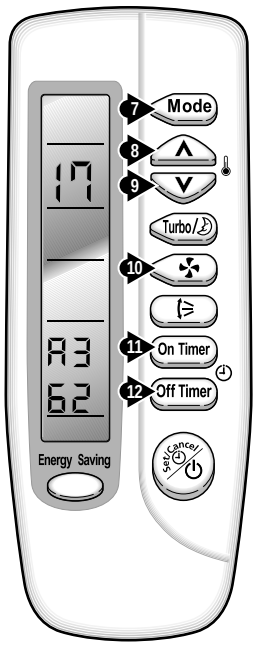
Push the button to set the display panel to 0 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**5**

Push the On Timer button to set the display panel to 2 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**6**

Push the Off Timer button to set the display panel to 4 .
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.




✳ Setting is not required if you must 0 a value which has a 0 default.

**7** Press Mode button, then the default value is 10.

**8** Push the ∧ button to set the display panel to 17.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**9** Push the ∨ button to set the display panel to A.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**10** Push the button to set the display panel to 3.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**11** Push the On Timer button to set the display panel to 6.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**12** Push the Off Timer button to set the display panel to 2.
Every time you push the button, the display panel reads 0 ➡ 1 ➡ 2 ➡ 3 ➡ · · · 9 ➡ A ➡ b ➡ c ➡ d ➡ E ➡ F repeatedly.

**Step 3 : Upon completion of the selection, check you made right selections.**

Press the Mode Selection key, Mode to set the display part to 0 and check the display part.

➡ The display part shows 05 / 70 / 24.

Press the Mode Selection key, Mode to set the display part to 1 and check the display part.

➡ The display part shows 17 / A3 / 62.

**Step 4 : Pressing the ON/OFF button ( )**

When pressing the operation ON/OFF key with the direction of remote controller for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON(≋) lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

**Step 5 : Unit operation test-run**

**First,** Remove the battery from the remote controller.

**Second,** Re-insert the battery into the remote controller.

**Third,** Press ON/OFF key with the direction of remote controller for set.

**• Error Mode**

1st If all lamps of indoor unit are flickering, Plug out and plug in battery again and pressing ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for it's model.

## ■ OPTION ITEMS

| REMOCON / MODEL | SEG1 | SEG2 | SEG3 | SEG4 | SEG5 | SEG6 | SEG7 | SEG8 | SEG9 | SEG10 | SEG11 | SEG12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SH07AS2 | 0 | 2 | 6 | 0 | 6 | 5 | 1 | 7 | A | 0 | F | b |
| SH07AS2A | 0 | 2 | 6 | 0 | 6 | 5 | 1 | 7 | A | 0 | F | b |
| SH09AS2 | 0 | 2 | 6 | 0 | 6 | 5 | 1 | 7 | A | 2 | 2 | E |
| SH12AS4 | 0 | 6 | 8 | 0 | 2 | 4 | 1 | 7 | A | 3 | 5 | 1 |

# 6. Troubleshooting

## 6-1 Items to be checked first

1. The input voltage should be rating voltage ±10% range.
   The airconditioner may not operate properly if the voltage is out of this range.

2. Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 5 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
   Otherwise the airconditioner may not operate properly.

3. When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the airconditioner.

| No | Operation of air conditioner | Explanation |
|---|---|---|
| 1 | The OPERATION indication LED(GREEN) blinks when a power plug of the indoor unit is plugged in for the first time. | It indicates power is on. The LED stops blinking if the operation ON/OFF button on the remote control unit is pushed. |
| 2 | In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate.<br>**[In case of heat pump model]**<br>In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate. | In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on.<br>As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew. |
| 3 | Fan speed setting is not allowed in DRY( ) mode. | The speed of the indoor fan is set to LL in DRY mode.<br>Fan speed is selected automatically in AUTO mode. |
| 4 | Compressor stops operation intermittently in DRY( ) mode. | Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity. |
| 5 | Timer LED(GREEN) of the indoor unit lights up and the air conditioner does not operate. | Timer is being activated and the unit is in ready mode.<br>The unit operates normally if the timer operation is cancelled. |
| 6 | The compressor stops intermittently in a COOL mode or DRY mode, and fan speed of the indoor unit decreases. | The compressor stops intermittently or the fan speed of the indoor unit decreases to prevent inside/outside air frozen depending on the inside/outside air temperature. |
| 7 | **[In case of heat pump model]**<br>Compressor of the outdoor unit is operating although it is turned off in a HEAT mode. | When the unit is turned off while de-ice is activated, the compressor continues operation for up to 9 minutes (maximum) until the deice is completed. |
| 8 | **[In case of heat pump model]**<br>The compressor and indoor fan stop intermittently in HEAT mode. | The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode. |
| 9 | **[In case of heat pump model]**<br>Indoor fan and outdoor fan stop operation intermittently in a HEAT mode. | The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation |

4. Indoor unit observes operation condition of the air conditioner, and displays self diagnosis details on the display panel.

| Error Mode | LAMP | | | 7-segment Display |
|---|---|---|---|---|
| | OPERATION | TIMER | TURBO | |
| | ≋ | ⏱ | TURBO | |
| Indoor unit room temperature sensor error (open or short) | ○ | ◑ | ○ | E1 |
| Indoor unit heat exchanger temperature sensor error (open or short) | ◑ | ◑ | ○ | E2 |
| Indoor fan motor malfunction | ◑ | ○ | ◑ | E3 |
| EEPROM error | ○ | ◑ | ◑ | E6 |
| Option error (option wasn't set up or option data error) | ◑ | ◑ | ◑ | Display Flickering |

○ : Lamp off ◑ : Lamp flickering

5. Operation with abnormal motion

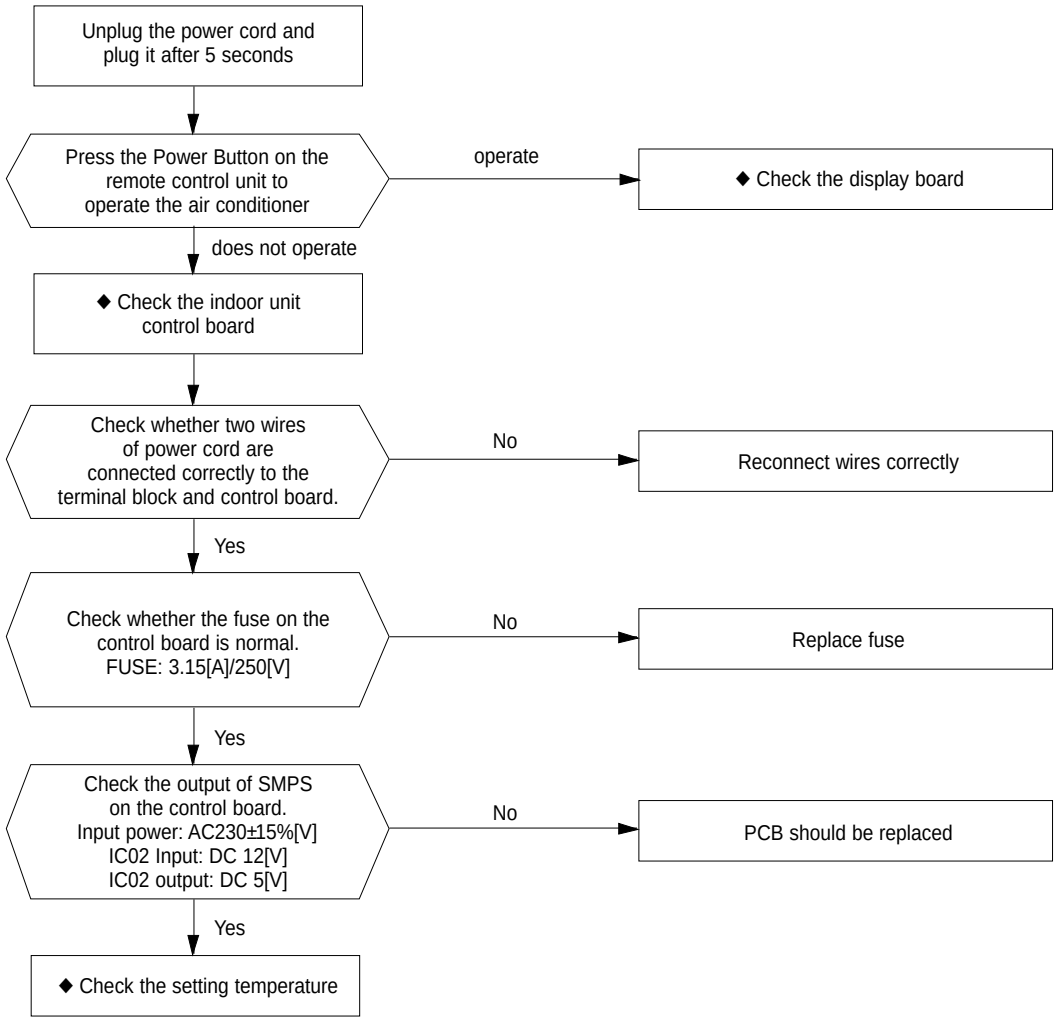
| No | Abnormal condition | Inspection | | Initial Diagnosis |
|---|---|---|---|---|
| 1 | No response from the remote control operation signal. | • Plug out and plug in 5 seconds later. | Able to operate the remote control. | OK |
| | | | Unable to operate the remote control. | Press the ⏻ (ON/OFF) button in the indoor unit.<br>• If it operates, the remote control and indoor unit receiver are in trouble.<br>• If not, the indoor unit is in trouble. |
| 2 | Unable to operate the outdoor unit | • Press the TURBO button with the remote control.<br>• In 3 minutes, check the voltage between the indoor unit terminal block N(1) and 1. | AC198V ~ AC242V | Problem with the outdoor unit or PCB |
| | | | No power source displayed. | Problem with the relay (RY71) or PCB |

# 6-2 Fault Diagnosis by Symptom

## 6-2-1 No Power (completely dead)-Initial diagnosis

1. Checklist :
   1) Is input voltage normal?
   2) Is AC power linked correctly?
   3) Is input voltage of DC regulator IC KA7805 (IC02) normal? (11VDC-12.5VDC)
   4) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)

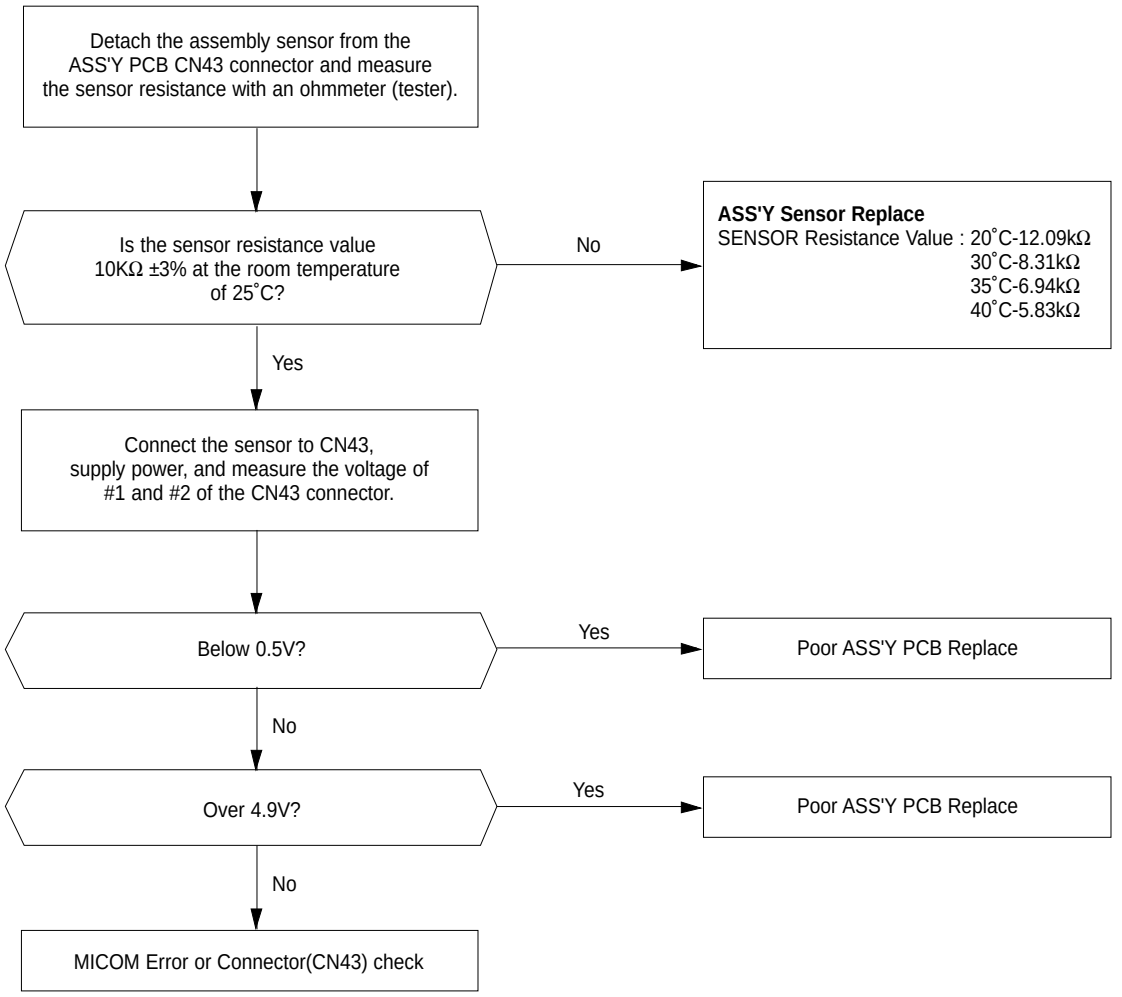
2. Troubleshooting procedure


Unplug the power cord and plug it after 5 seconds
Press the Power Button on the remote control unit to operate the air conditioner
operate
◆ Check the display board
does not operate
◆ Check the indoor unit control board
Check whether two wires of power cord are connected correctly to the terminal block and control board.
No
Reconnect wires correctly
Yes
Check whether the fuse on the control board is normal. FUSE: 3.15[A]/250[V]
No
Replace fuse
Yes
Check the output of SMPS on the control board. Input power: AC230±15%[V] IC02 Input: DC 12[V] IC02 output: DC 5[V]
No
PCB should be replaced
Yes
◆ Check the setting temperature

## 6-2-2 Room temperature sensor failure

| Description | LAMP | | | 7-segment Display |
|---|---|---|---|---|
| | OPERATION | TIMER | TURBO | |
| | ≋ | ◷ | TURBO | |
| Indoor unit room temperature sensor error(open or short) | ○ | ◑ | ○ | E 1 |

○ : Lamp off ◑ : Lamp flickering


Detach the assembly sensor from the ASS'Y PCB CN43 connector and measure the sensor resistance with an ohmmeter (tester).
Is the sensor resistance value 10KΩ ±3% at the room temperature of 25˚C?
No
ASS'Y Sensor Replace
SENSOR Resistance Value : 20˚C-12.09kΩ
30˚C-8.31kΩ
35˚C-6.94kΩ
40˚C-5.83kΩ
Yes
Connect the sensor to CN43, supply power, and measure the voltage of #1 and #2 of the CN43 connector.
Below 0.5V?
Yes
Poor ASS'Y PCB Replace
No
Over 4.9V?
Yes
Poor ASS'Y PCB Replace
No
MICOM Error or Connector(CN43) check

## 6-2-3 Room Pipe sensor failure

| Description | LAMP | | | 7-segment Display |
|---|---|---|---|---|
| | OPERATION | TIMER | TURBO | |
| | ≋ | ⏱ | TURBO | |
| Indoor unit heat exchanger temperature sensor error (open or short) | ◑ | ◑ | ○ | E2 |

○ : Lamp off ◑ : Lamp flickering

1. Check the assembly condition of the sensor connector(CN43) on the indoor unit Main PCB and if not assembled, reassemble the connector accurately.

2. Detach the room pipe sensor connector(CN43) and check the resistance between connector 3 and 4.

| Temperature(˚C) | Resistance Value(Kohm) | Temperature(˚C) | Resistance Value(Kohm) | Others |
|---|---|---|---|---|
| 15 | 14.68 | 30 | 8.31 | The data tolerance is ±3%. |
| 20 | 12.09 | 35 | 6.94 | |
| 25 | 10 | 40 | 5.83 | |

   If the above data is not met, replace the room pipe sensor.

3. Assemble the room pipe sensor to PCB, plug in, and check the voltage of connector 3 and 4. If the resistance is below 0.5V or over 4.9V, replace the indoor Main PCB. (short or disconnected in the PCB board)

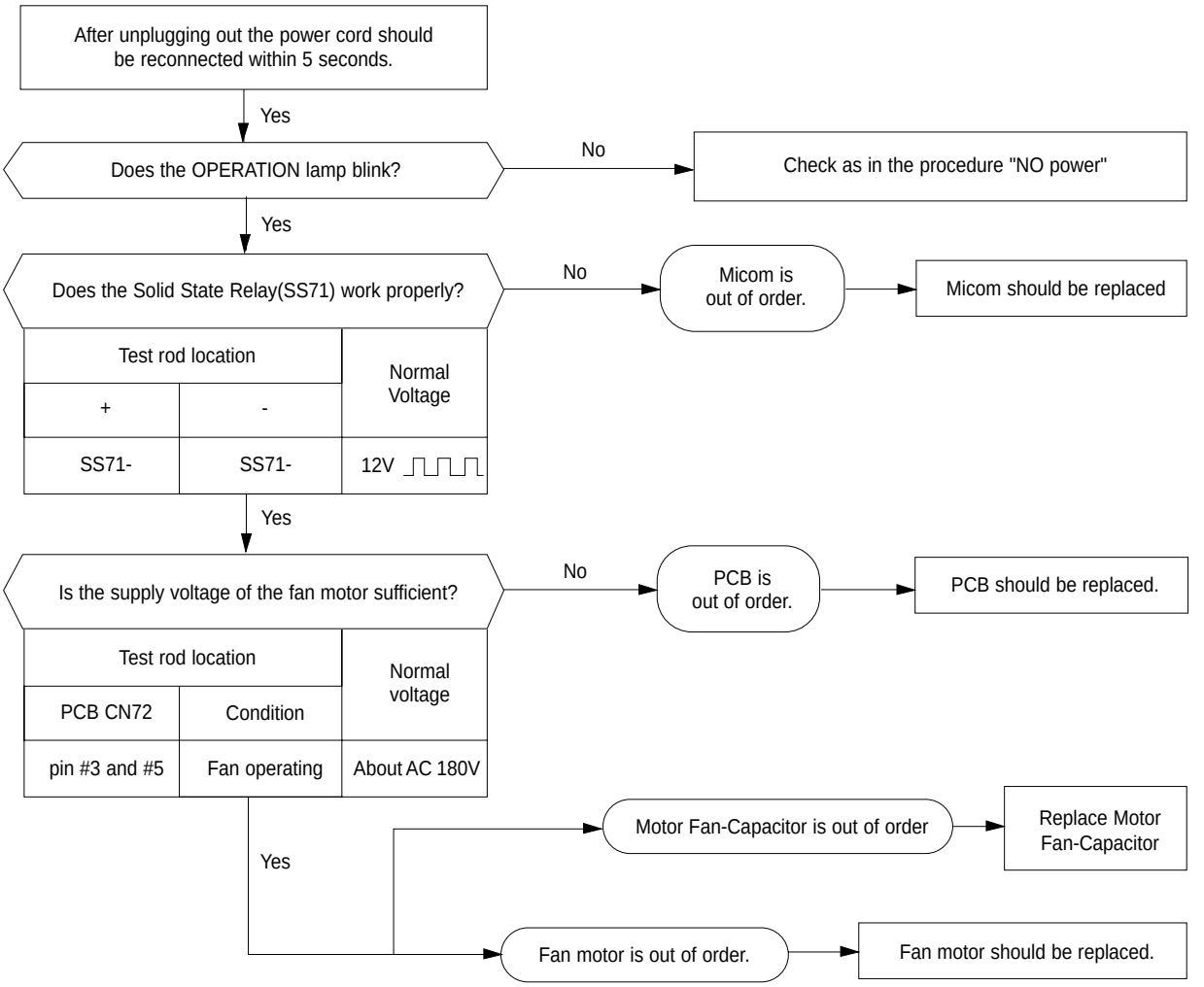
## 6-2-4 When the Indoor Unit Fan Does Not Operate. (Initial Diagnosis)

| Description | LAMP | | | 7-segment Display |
|---|---|---|---|---|
| | OPERATION | TIMER | TURBO | |
| | ≋ | ◷ | TURBO | |
| Indoor fan motor malfunction | ◑ | ○ | ◑ | E3 |

○ : Lamp off ◑ : Lamp flickering

1. Checklist :
   1) Is the indoor unit fan motor properly connected with the connector (CN72)?
   2) Is the AC voltage correct?
   3) Is HALL IC in indoor fan motor properly connected with the connector (CN44)?
   4) Is the running capacitor (CR71) properly connected with PCB board?

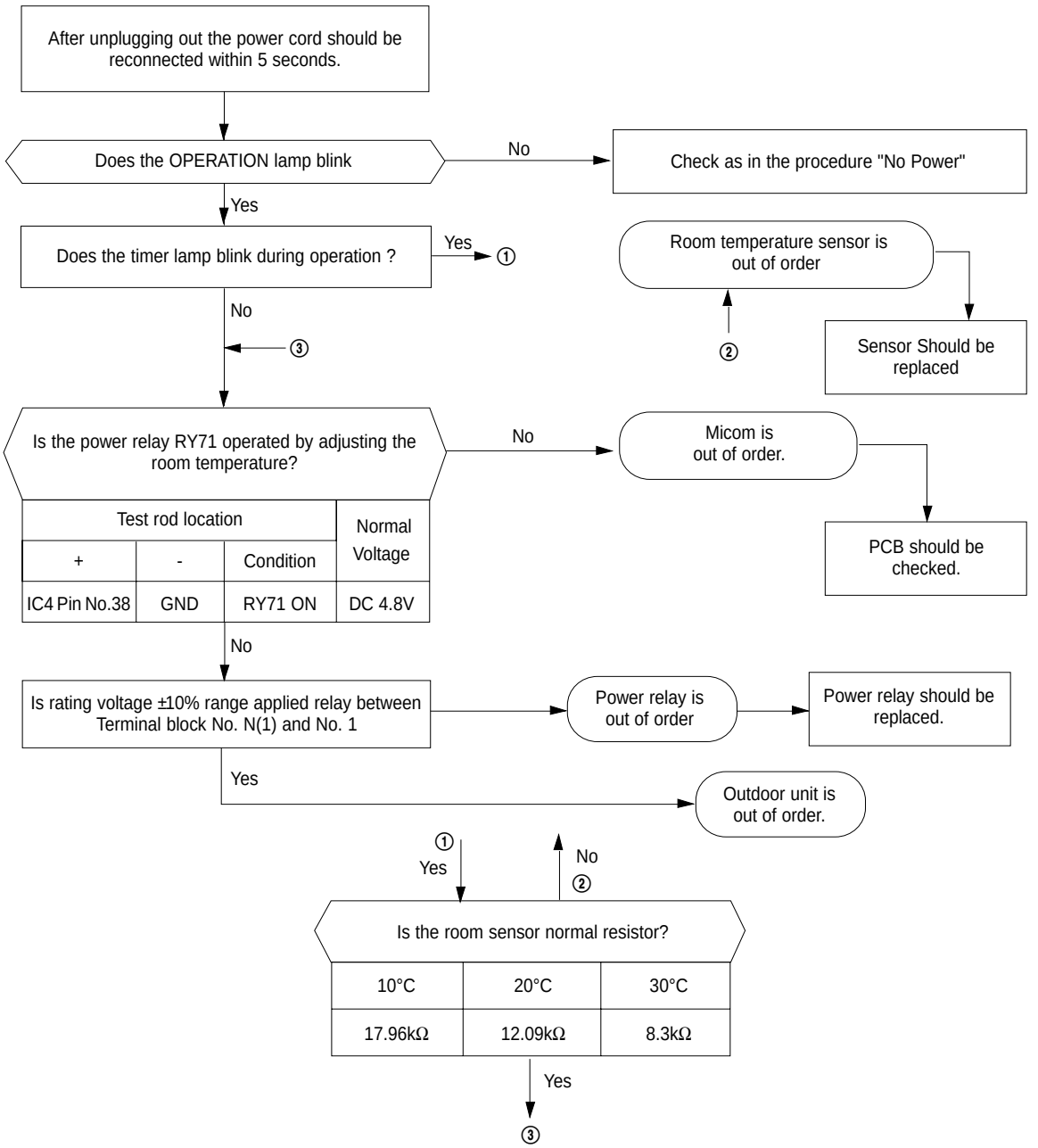
2. Troubleshooting procedure



## 6-2-5 When the Outdoor Unit Does Not Operate. (Initial Diagnosis)

1. Checklist :
   1) Is input voltage normal?
   2) Is the set temperature of the remote control higher than room temperature in COOL mode?
   3) Is the set temperature of the remote control lower than room temperature in HEAT mode?
   4) Is the POWER IN connector (CN71) linked correctly?
   5) Is the outdoor unit properly connected with the TERMINAL BLOCK connector(N(1), 1, 2, 3)?

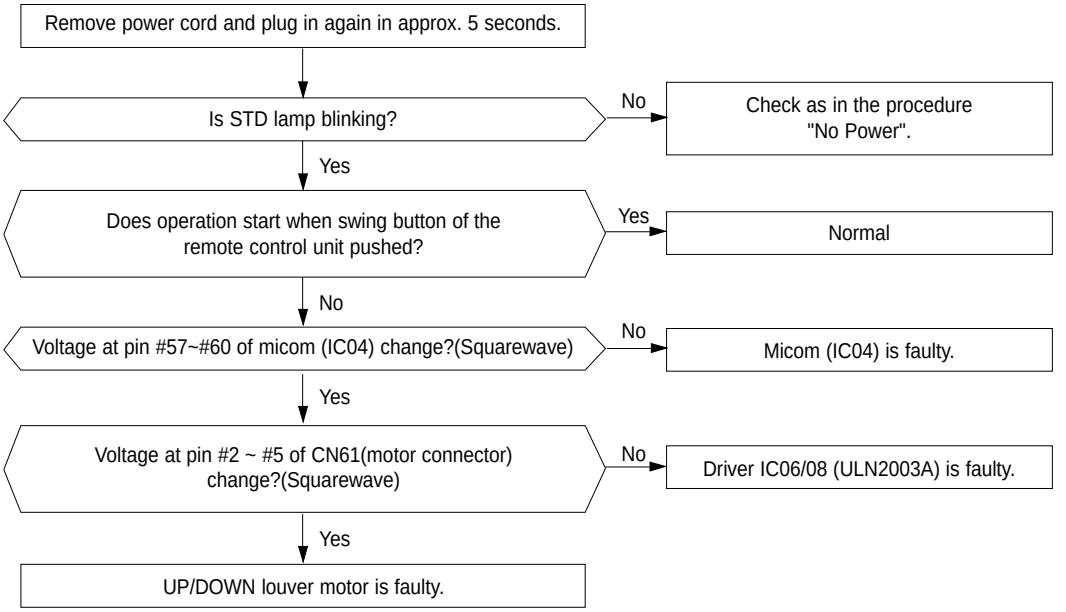
2. Troubleshooting procedure



## 6-2-6 When the UP/DOWN Louver Motor Does Not Operate. (Initial Diagnosis)

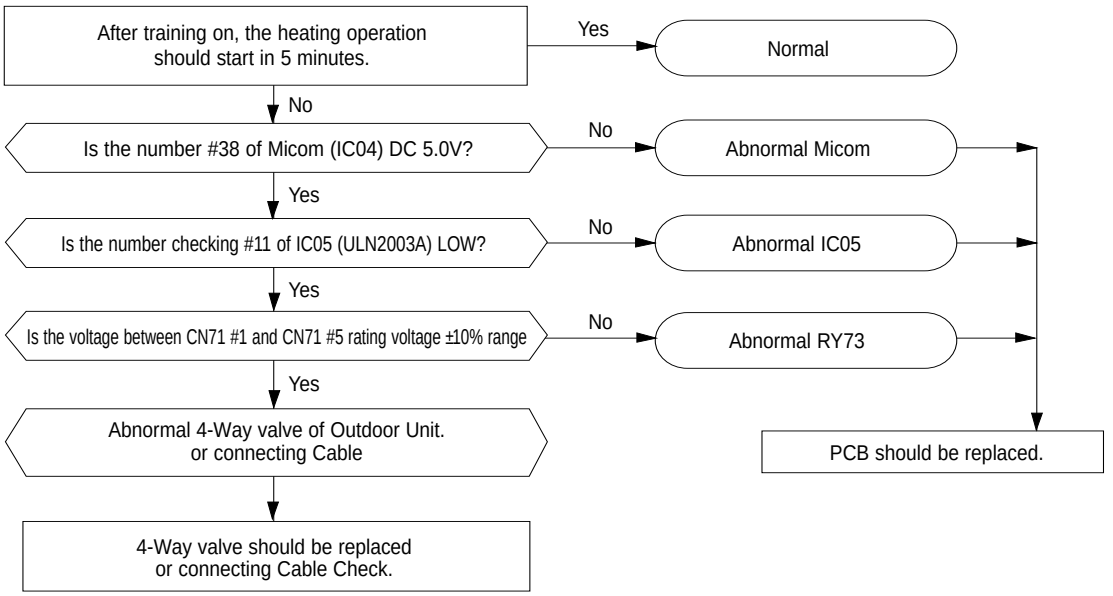
1. Checklist :
   1) Is input voltage normal?
   2) Is the UP/DOWN louver motor properly connected with the connector (CN61)?

2. Troubleshooting procedure


Remove power cord and plug in again in approx. 5 seconds.
Is STD lamp blinking?
No
Check as in the procedure "No Power".
Yes
Does operation start when swing button of the remote control unit pushed?
Yes
Normal
No
Voltage at pin #57~#60 of micom (IC04) change?(Squarewave)
No
Micom (IC04) is faulty.
Yes
Voltage at pin #2 ~ #5 of CN61(motor connector) change?(Squarewave)
No
Driver IC06/08 (ULN2003A) is faulty.
Yes
UP/DOWN louver motor is faulty.

## 6-2-7 In the HEAT mode, When there is no warm air current. Check this fist;

1. Is the set temperature of Remote Control lower than room temperature in Heat mode?
2. Is the Indoor PCB properly connected with the CN71 connector?


After training on, the heating operation should start in 5 minutes.
Yes
Normal
No
Is the number #38 of Micom (IC04) DC 5.0V?
No
Abnormal Micom
Yes
Is the number checking #11 of IC05 (ULN2003A) LOW?
No
Abnormal IC05
Yes
Is the voltage between CN71 #1 and CN71 #5 rating voltage ±10% range
No
Abnormal RY73
Yes
Abnormal 4-Way valve of Outdoor Unit. or connecting Cable
PCB should be replaced.
4-Way valve should be replaced or connecting Cable Check.

## 6-2-8 When the remote control is not receiving

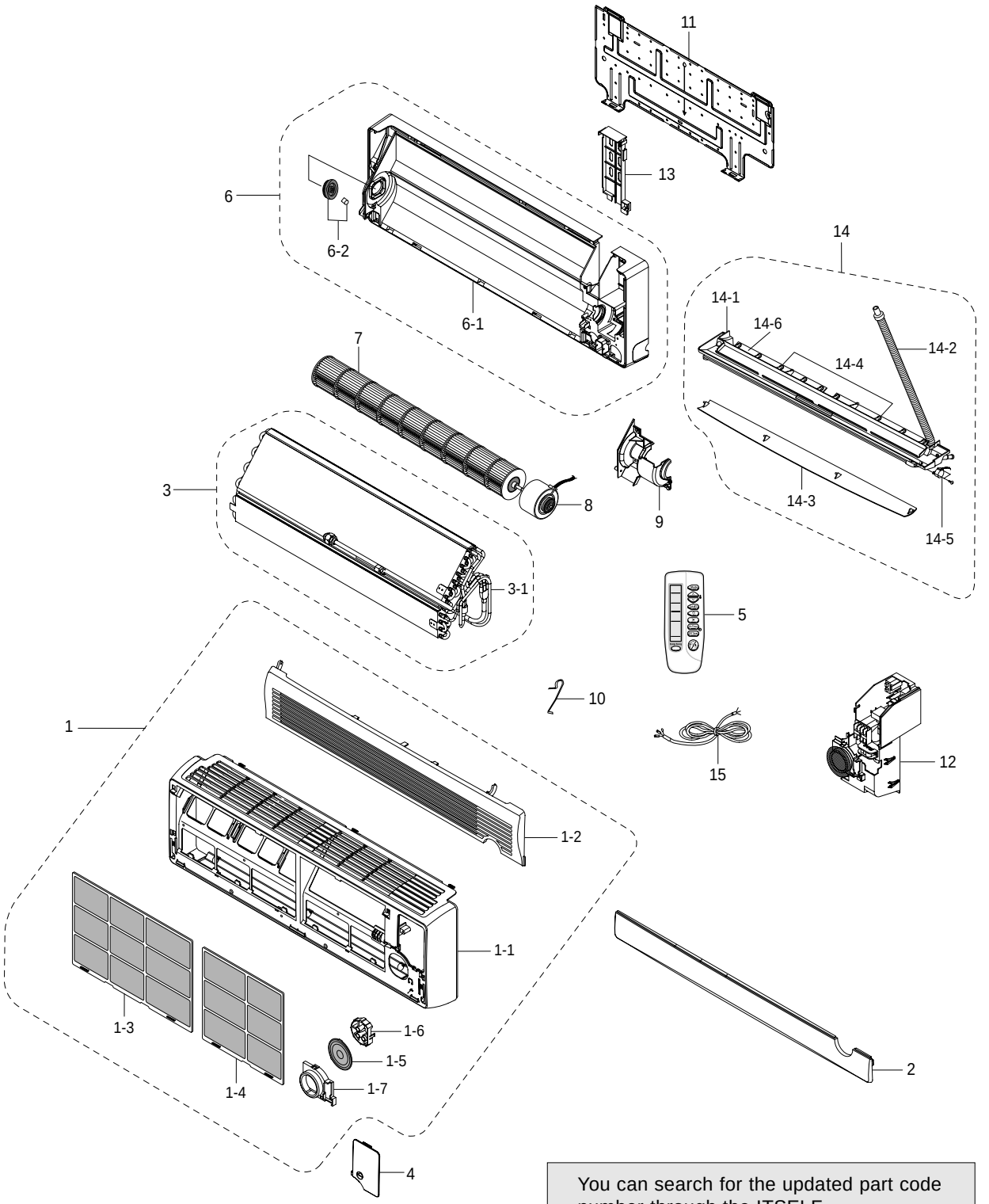
1. Check if the connector was normally assembled.

2. Put the set in operation and check the voltage of No. 3(+) and No. 2(-) of the main PCB CN91 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.

3. Replace the assembly display PCB because the module PCB is poor if the voltage between No. 2~3 of CN91 maintains 5V after the remote control starts operation.

# 7. Exploded Views and Parts List

## 7-1 Indoor Unit



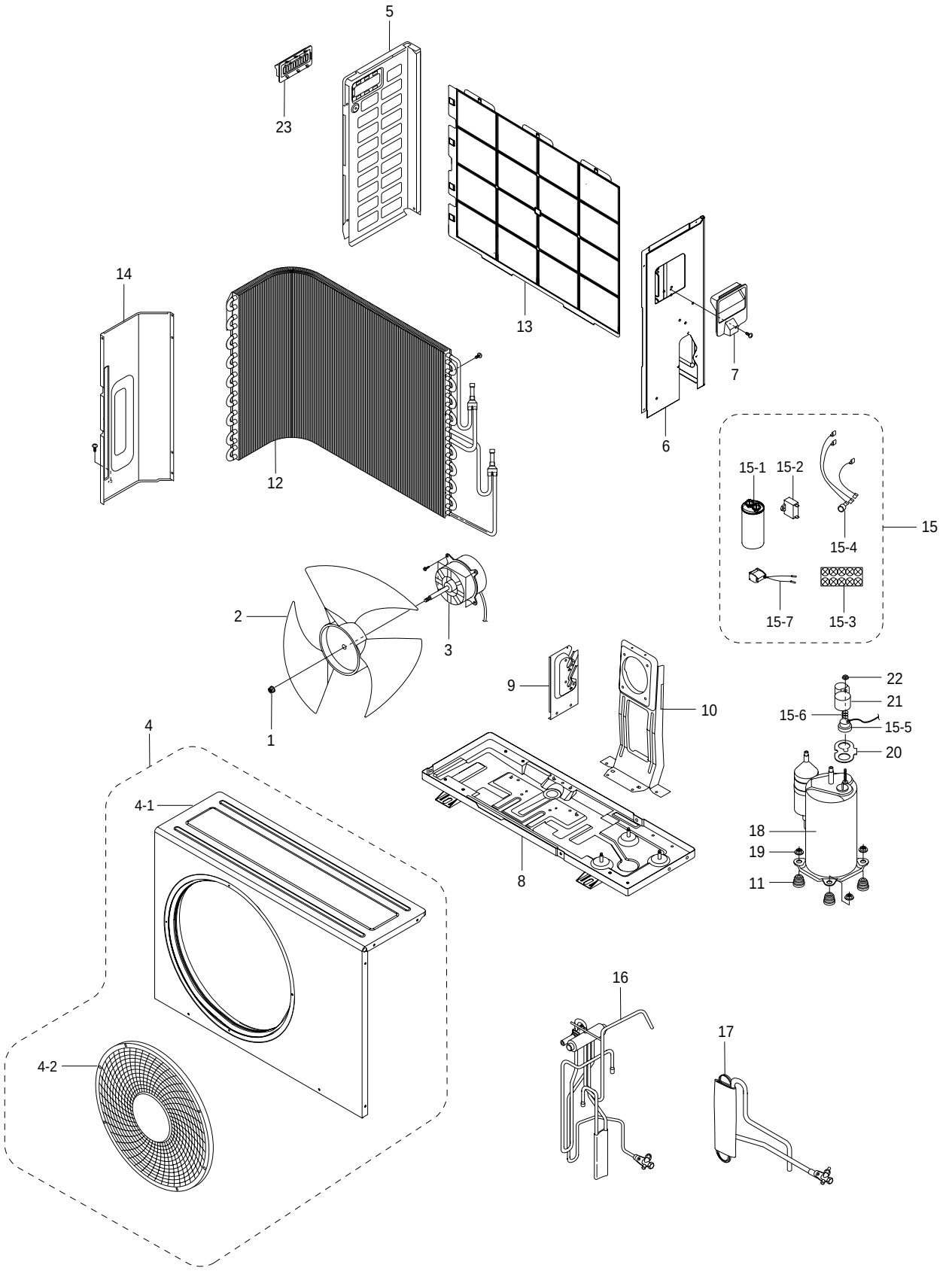

You can search for the updated part code number through the ITSELF.

URL : http://itself.sec.samsung.co.kr

## ■ Parts List

| No. | Code No. | Description | Specification | Q'TY | | | Remark |
|---|---|---|---|---|---|---|---|
| | | | | SH07AS2 SH07AS2A | SH09AS2 | SH12AS4 | |
| 1 | DB92-00574A | ASS'Y PANEL FRONT TOTAL | ASS'Y | - | - | 1 | |
| | DB92-00582A | ASS'Y PANEL FRONT TOTAL | ASS'Y | 1 | 1 | - | |
| 1-1 | DB92-00575A | ASS'Y PANEL FRONT SVC | ASS'Y | - | - | 1 | |
| | DB92-00581A | ASS'Y PANEL FRONT SVC | ASS'Y | 1 | 1 | - | |
| 1-2 | DB64-00984A | GRILLE UP | ABS | - | - | 1 | |
| | DB64-00987A | GRILLE UP | ABS | 1 | 1 | - | |
| 1-3 | DB63-00858A | FILTER-AIR LF | PP | - | - | 1 | |
| | DB63-00856A | FILTER-AIR LF | PP | 1 | 1 | - | |
| 1-4 | DB63-00859A | FILTER-AIR RH | PP | - | - | 1 | |
| | DB63-00857A | FILTER-AIR RH | PP | 1 | 1 | - | |
| 1-5 | DB64-00986A | WINDOW DISPLAY | PC | 1 | 1 | 1 | |
| 1-6 | DB61-01630A | HOLDER PCB | HIPS | 1 | 1 | 1 | |
| 1-7 | DB61-01629A | HOLDER DISPLAY | ABS | 1 | 1 | 1 | |
| 2 | DB64-00985A | GRILLE LOW | ASS'Y | - | - | 1 | |
| | DB64-00988A | GRILLE LOW | ASS'Y | 1 | 1 | - | |
| 3 | DB96-03109A | ASS'Y EVAPORATOR TOTAL | ASS'Y | - | - | 1 | |
| | DB96-02145G | ASS'Y EVAPORATOR TOTAL | ASS'Y | 1 | 1 | - | |
| 3-1 | DB96-03102A | ASS'Y EVAPORATOR | ASS'Y | - | - | 1 | |
| | DB96-03101A | ASS'Y EVAPORATOR | ASS'Y | 1 | 1 | - | |
| 4 | DB63-00581A | COVER TERMINAL | HIPS | - | - | 1 | |
| | DB63-00588A | COVER TERMINAL | HIPS | 1 | 1 | - | |
| 5 | DB93-01364B | ASS'Y REMOCON | ASS'Y | 1 | 1 | 1 | |
| 6 | DB94-00490A | ASS'Y BACK BODY | ASS'Y | - | - | 1 | |
| | DB94-00508A | ASS'Y BACK BODY | ASS'Y | 1 | 1 | - | |
| 6-1 | DB61-01779A | BACK BODY | HIPS | - | - | 1 | |
| | DB61-01119A | BACK BODY | HIPS | 1 | 1 | - | |
| 6-2 | DB94-00258A | ASS'Y BEARING | ASS'Y | 1 | 1 | 1 | |
| 7 | DB94-00040R | ASS'Y CROSS FAN | ASS'Y | - | - | 1 | |
| | DB94-00040F | ASS'Y CROSS FAN | ASS'Y | 1 | 1 | - | |
| 8 | DB31-00152B | MOTOR-FAN IN | - | - | - | 1 | |
| | DB31-00152A | MOTOR-FAN IN | - | 1 | 1 | - | |
| 9 | DB61-01099A | HOLDER-MOTOR | PP | - | - | 1 | |
| | DB61-01120A | HOLDER-MOTOR | PP | 1 | 1 | - | |
| 10 | DB67-60030A | SPRING-SENSOR | STS301 | 1 | 1 | 1 | |
| 11 | DB70-00276A | PLATE-HANGER | SGCC-M | - | - | 1 | |
| | DB70-00288A | PLATE-HANGER | SGCC-M | 1 | 1 | - | |
| 12 | DB93-02539A | ASS'Y CONTROL IN | ASS'Y | - | - | 1 | |
| | DB93-02524A | ASS'Y CONTROL IN | ASS'Y | 1 | 1 | - | |
| 13 | DB90-00992A | HOLDER-PIPE | HIPS | - | - | 1 | |
| | DB61-01121A | HOLDER-PIPE | HIPS | 1 | 1 | - | |
| 14 | DB94-00468B | ASS'Y TRAY DRAIN | ASS'Y | - | - | 1 | |
| | DB94-00465A | ASS'Y TRAY DRAIN | ASS'Y | 1 | 1 | - | |
| 14-1 | DB63-00587A | TRAY DRAIN | HIPS | - | - | 1 | |
| | DB63-00592A | TRAY DRAIN | HIPS | 1 | 1 | - | |
| 14-2 | DB94-00062E | ASS'Y HOSE DRAIN | ASS'Y | 1 | 1 | 1 | |
| 14-3 | DB61-01103A | BLADE-H | HIPS | - | - | 1 | |
| | DB61-01125A | BLADE-H | HIPS | 1 | 1 | - | |
| 14-4 | DB61-01104A | BLADE-V | PP | - | - | 3 | |
| | DB61-01126A | BLADE-V | PP | 3 | 3 | - | |
| 14-5 | DB95-20138A | ASS'Y STEPPING MOTOR | ASS'Y | 1 | 1 | 1 | |
| 14-6 | DB63-00634A | GUARD-SAFETY WIRE | STS27 | - | - | 1 | OPTION |
| | DB63-00635A | GUARD-SAFETY WIRE | STS27 | 1 | 1 | - | OPTION |
| 15 | DB93-01549B | ASS'Y CONNECTOR POWER | 1mm$^2$x3C | 1 | 1 | 1 | |

## 7-2 Outdoor Unit

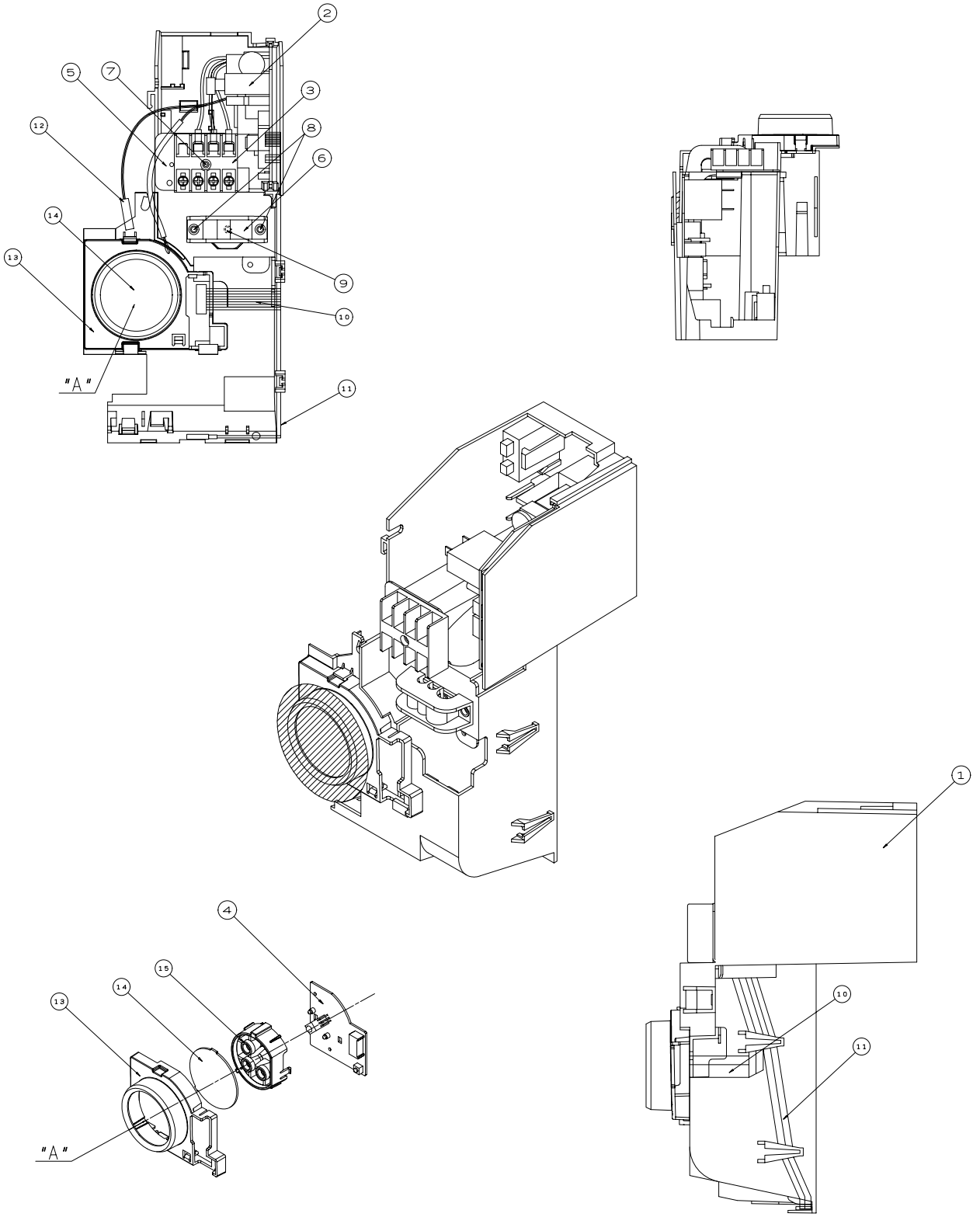


## ■ Parts List

| No. | Code No. | Description | Specification | Q'TY | | | |
|---|---|---|---|---|---|---|---|
| | | | | SH07AS2X | SH07AS2AX | SH09AS2X | SH12AS4X |
| 1 | DB60-30020A | NUT FLANGE | 2C,M6,SM20C,NTR | 1 | 1 | 1 | 1 |
| 2 | DB67-00036A | FAN PROPELLER | AS+G/F 20%,ø375 | 1 | 1 | 1 | - |
| | DB67-50063A | FAN PROPELLER | AS+G/F 20%,ø405 | - | - | - | 1 |
| 3 | DB31-00034A | MOTOR FAN OUT | 220/240V,50/60Hz | 1 | 1 | 1 | - |
| | DB31-10058C | MOTOR FAN OUT | 220/240V,50/60Hz | - | - | - | 1 |
| 4 | DB90-01405A | ASS'Y CABINET FRONT | ASS'Y | - | - | - | 1 |
| | DB90-01406A | ASS'Y CABINET FRONT | ASS'Y | 1 | 1 | 1 | - |
| 4-1 | DB64-00978A | CABINET FRONT | SECC-P | - | - | - | 1 |
| | DB64-00999A | CABINET FRONT | SECC-P | 1 | 1 | 1 | - |
| 4-2 | DB63-00863A | GUARD FAN | PP | - | - | - | 1 |
| | DB63-00862A | GUARD FAN | PP | 1 | 1 | 1 | - |
| 5 | DB64-00979A | CABINET SIDE LF | SECC-P | - | - | - | 1 |
| | DB64-01001A | CABINET SIDE LF | SECC-P | 1 | 1 | 1 | - |
| 6 | DB64-00980A | CABINET SIDE RH | SECC-P | - | - | - | 1 |
| | DB90-01426A | CABINET SIDE RH | SECC-P | 1 | 1 | 1 | - |
| 7 | DB63-10443C | COVER E PARTS ASS'Y | ASS'Y | 1 | 1 | 1 | 1 |
| 8 | DB90-01404A | ASS'Y BASE OUTDOOR | ASS'Y | - | - | - | 1 |
| | DB90-01273B | ASS'Y BASE OUTDOOR | ASS'Y | - | 1 | 1 | - |
| | DB90-01273A | ASS'Y BASE OUTDOOR | ASS'Y | 1 | - | - | - |
| 9 | DB61-01623A | BRACKET VALVE | GALVANIZED STEEL | 1 | 1 | 1 | 1 |
| 10 | DB61-01648A | BRACKET MOTOR | GALVANIZED STEEL | - | - | - | 1 |
| | DB94-00561C | BRACKET MOTOR | GALVANIZED STEEL | 1 | 1 | 1 | - |
| 11 | DB73-00067A | GROMMET-ISOLATOR | NR | - | - | - | 3 |
| | DB73-00070A | GROMMET-ISOLATOR | NR | - | 3 | 3 | - |
| | DB63-00930A | GROMMET-ISOLATOR | NR | 3 | - | - | - |
| 12 | DB96-02976A | ASS'Y COND | ASS'Y | - | - | - | 1 |
| | DB96-02985A | ASS'Y COND | ASS'Y | - | - | 1 | - |
| | DB96-02984A | ASS'Y COND | ASS'Y | 1 | 1 | - | - |
| 13 | DB64-00998A | SCREEN COND | PP | - | - | - | 1 |
| | DB64-00997A | SCREEN COND | PP | 1 | 1 | 1 | - |
| 14 | DB94-00497B | ASS'Y PARTITION | ASS'Y | 1 | 1 | - | - |
| | DB94-00497A | ASS'Y PARTITION | ASS'Y | - | - | 1 | - |
| | DB94-00520A | ASS'Y PARTITION | ASS'Y | - | - | - | 1 |
| 15 | DB93-02556C | ASS'Y CONTROL OUT | ASS'Y | - | - | - | 1 |
| | DB93-02556B | ASS'Y CONTROL OUT | ASS'Y | - | - | 1 | - |
| | DB93-02556A | ASS'Y CONTROL OUT | ASS'Y | 1 | - | - | - |
| | DB93-02556Q | ASS'Y CONTROL OUT | ASS'Y | - | 1 | - | - |
| 15-1 | 2501-001237 | CAPACITOR-COMP | 35uF/450VAC | - | - | 1 | 1 |
| | 2501-001236 | CAPACITOR-COMP | 30uF/450VAC | 1 | 1 | - | - |
| 15-2 | 2301-001375 | CAPACITOR-MOTOR | 1.5uF/450VAC | 1 | 1 | 1 | 1 |
| 15-3 | DB65-40049E | TERMINAL BLOCK | 4P | 1 | 1 | 1 | 1 |
| 15-4 | DB93-01547D | ASS'Y LEAD WIRE | SAMSUNG COMPor | - | 1 | 1 | 1 |
| | DB93-01547C | ASS'Y LEAD WIRE | MATSUSHITA COMPor | 1 | - | - | - |
| 15-5 | DB35-00028B | OLP | RBC 12128-12500 | - | - | - | 1 |
| | DB35-00028C | OLP | RBC 12131-12500 | - | - | 1 | - |
| | DB35-00026A | OLP | MRA99901-9201 | 1 | - | - | - |
| | DB35-00015T | OLP | RAC12126-9622 | - | 1 | - | - |
| 15-6 | DB67-60020A | OLP SPRING | STS304 | 1 | 1 | 1 | 1 |
| 15-7 | DB33-00049B | ASS'Y SOLENOID COIL | ASS'Y | 1 | 1 | 1 | 1 |
| 16 | DB96-03142A | ASS'Y TUBE 4WAY VALVE | ASS'Y | - | - | - | 1 |
| | DB96-03144A | ASS'Y TUBE 4WAY VALVE | ASS'Y | - | - | 1 | - |
| | DB96-03145A | ASS'Y TUBE 4WAY VALVE | ASS'Y | 1 | - | - | - |
| | DB96-03532A | ASS'Y TUBE 4WAY VALVE | ASS'Y | - | 1 | - | - |
| 17 | DB96-03143A | ASS'Y TUBE CAPILLARY | ASS'Y | - | - | - | 1 |
| | DB96-03146A | ASS'Y TUBE CAPILLARY | ASS'Y | - | - | 1 | - |
| | DB96-03146B | ASS'Y TUBE CAPILLARY | ASS'Y | 1 | - | - | - |
| | DB96-03146D | ASS'Y TUBE CAPILLARY | ASS'Y | - | 1 | - | - |
| 18 | G8C124JU1EL | COMPRESSOR | 220-240V/50Hz | - | - | - | 1 |
| | G4A097JU1EP | COMPRESSOR | 220-240V/50Hz | - | - | 1 | - |
| | DB95-00477A | COMPRESSOR | 5PS102, 220-240V/50Hz | 1 | - | - | - |
| | G4A080JV1EP | COMPRESSOR | 220-240V/50Hz | - | 1 | - | - |
| 19 | DB60-30028A | NUT WASHER | HEX 2C M8 ZPC | 3 | 3 | 3 | 3 |
| 20 | DB63-20002A | GASKET | EPDM | - | 1 | 1 | 1 |
| | DB63-00929A | GASKET | EPT | 1 | - | - | - |
| 21 | DB63-10165D | COVER TERMINAL | POM | - | 1 | 1 | 1 |
| | DB63-00927A | COVER TERMINAL | PET | 1 | - | - | - |
| 22 | DB60-30018A | NUT FLANGE | M5, SM20C | - | 1 | 1 | 1 |
| | DB60-30020A | NUT FLANGE | M6 | 1 | - | - | - |
| 23 | DB64-01003A | HANDLE CABINET LF | PP | 1 | 1 | 1 | 1 |

## 7-3 Ass'y Control In (Indoor Unit)

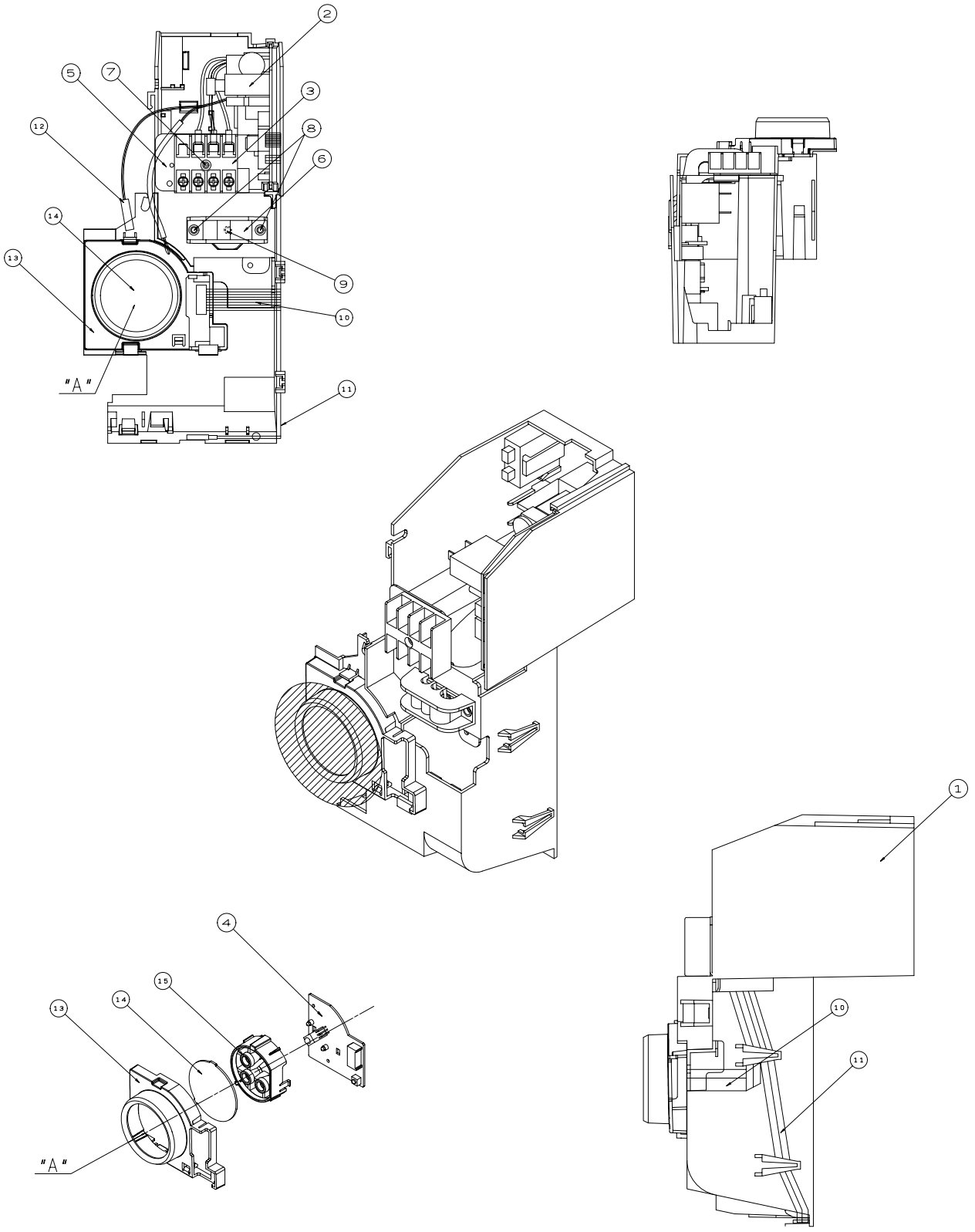
### ■ SH07AS2/SH07AS2A/SH09AS2 : DB93-02524A



## ■ Parts List

| No. | Code No. | Description | Specification | Q'TY | Remark |
|---|---|---|---|---|---|
| 1 | DB61-01127A | CASE-CONTROL | ABS | 1 | |
| 2 | DB93-02447A | ASS'Y-MAIN PCB | ASS'Y | 1 | |
| 3 | DB93-02508A | ASS'Y-TERMINAL BLOCK | ASS'Y | 1 | |
| 4 | DB93-02525A | ASS'Y SUB PCB | ASS'Y | 1 | |
| 5 | DB70-00289A | PLATE-TERMINAL LOW | SGCC-M T1.2 | 1 | |
| 6 | DB61-00171A | HOLDER-WIRE CLAMP | ABS | 1 | |
| 7 | - | SCREW-MACHINE | PH M3xL22 | 1 | SNA |
| 8 | - | SCREW-MACHINE | TH M4xL16 | 2 | SNA |
| 9 | - | SCREW-MACHINE | PH M4xL10 | 1 | SNA |
| 10 | DB39-00949A | ASS'Y C/W SUB | ASS'Y | 1 | |
| 11 | DB39-00643M | ASS'Y C/W STEP MOTOR | ASS'Y | 1 | |
| 12 | DB32-00020A | ASS'Y-THERMISTOR | 4P(103AT) | 1 | |
| 13 | DB61-01629A | HOLDER DISPLAY | ABS | 1 | |
| 14 | DB64-00986A | WINDOW DISPLAY | - | 1 | |
| 15 | DB61-01630A | ASS'Y HOLDER PCB | HIPS | 1 | |

## ■ SH12AS4 : DB93-02539A

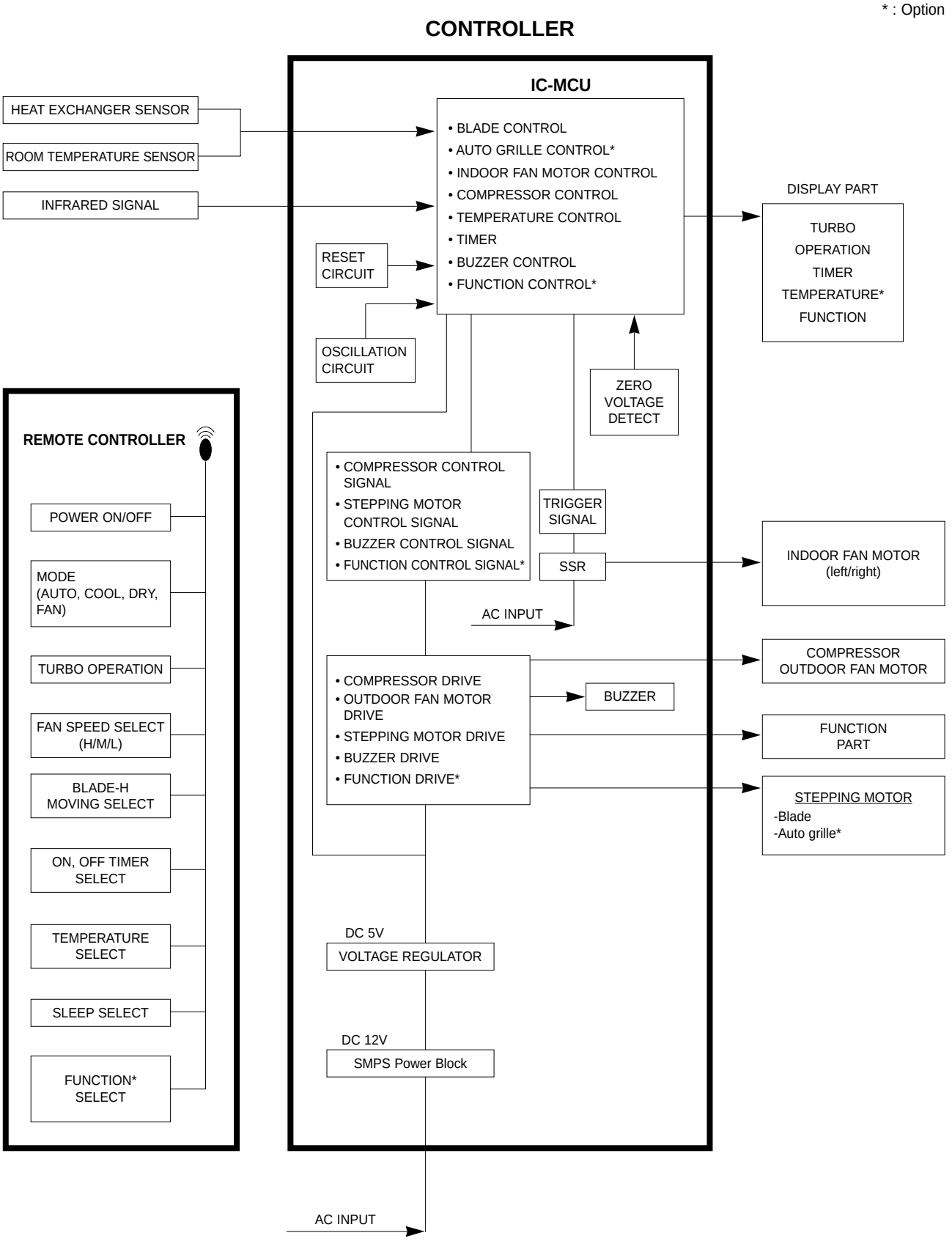


## ■ Parts List

| No. | Code No. | Description | Specification | Q'TY | Remark |
|---|---|---|---|---|---|
| 1 | DB61-01631A | CASE-CONTROL | ABS | 1 | |
| 2 | DB93-02447A | ASS'Y-MAIN PCB | ASS'Y | 1 | |
| 3 | DB93-02508A | ASS'Y-TERMINAL BLOCK | ASS'Y | 1 | |
| 4 | DB93-02525A | ASS'Y SUB PCB | ASS'Y | 1 | |
| 5 | - | PLATE-TERMINAL LOW | SGCC-M T1.2 | 1 | SNA |
| 6 | DB61-00171A | HOLDER-WIRE CLAMP | ABS | 1 | |
| 7 | - | SCREW-MACHINE | PH M3xL22 | 1 | SNA |
| 8 | - | SCREW-MACHINE | TH M4xL16 | 2 | SNA |
| 9 | - | SCREW-MACHINE | PH M4xL10 | 1 | SNA |
| 10 | DB39-00949A | ASS'Y C/W SUB | ASS'Y | 1 | |
| 11 | DB39-00643F | ASS'Y C/W STEP MOTOR | ASS'Y | 1 | |
| 12 | DB32-00020A | ASS'Y-THERMISTOR | 4P(103AT) | 1 | |
| 13 | DB61-01629A | HOLDER DISPLAY | ABS | 1 | |
| 14 | DB64-00986A | WINDOW DISPLAY | - | 1 | |
| 15 | DB61-01630A | ASS'Y HOLDER PCB | HIPS | 1 | |

# 8. Block Diagram

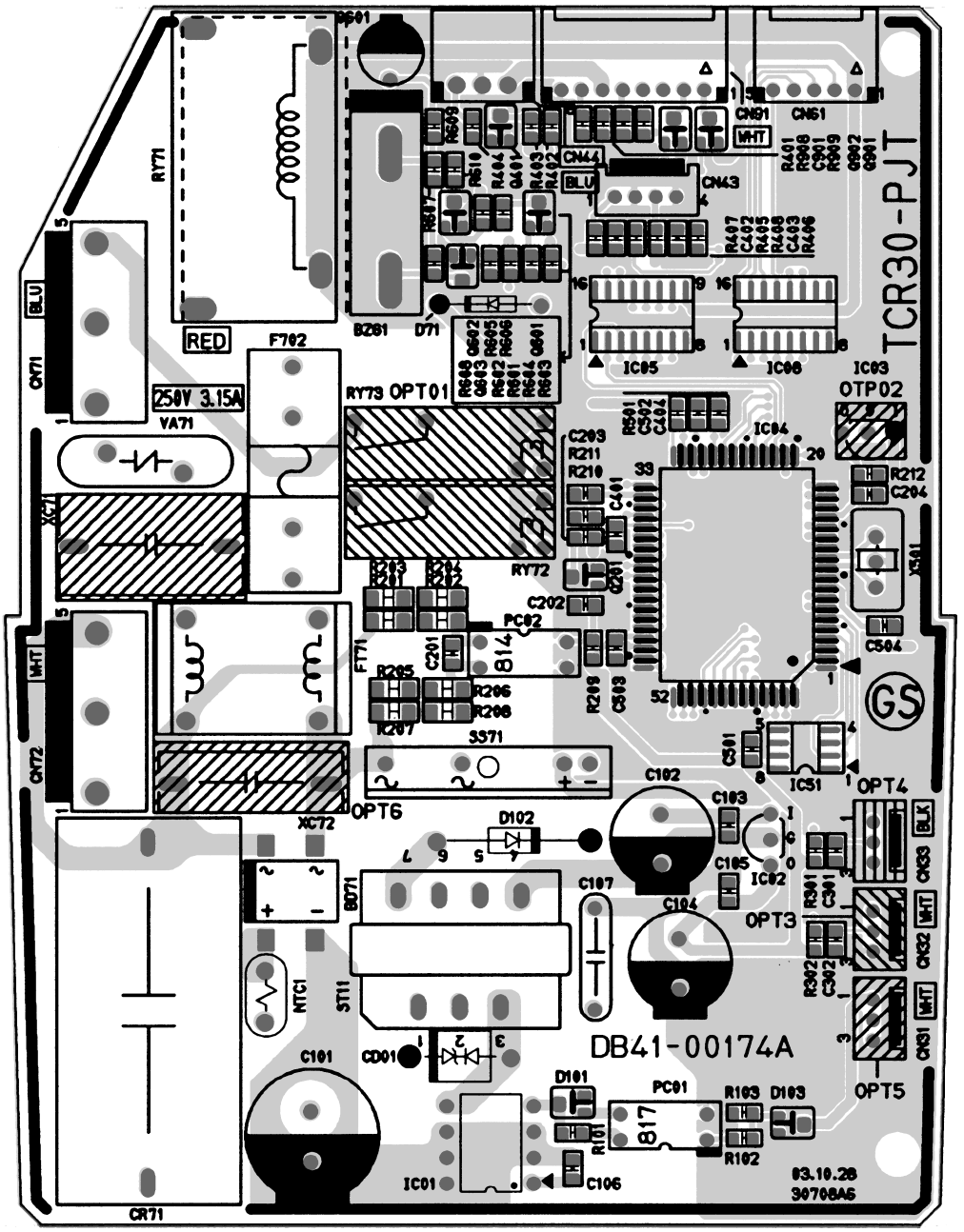
* : Option



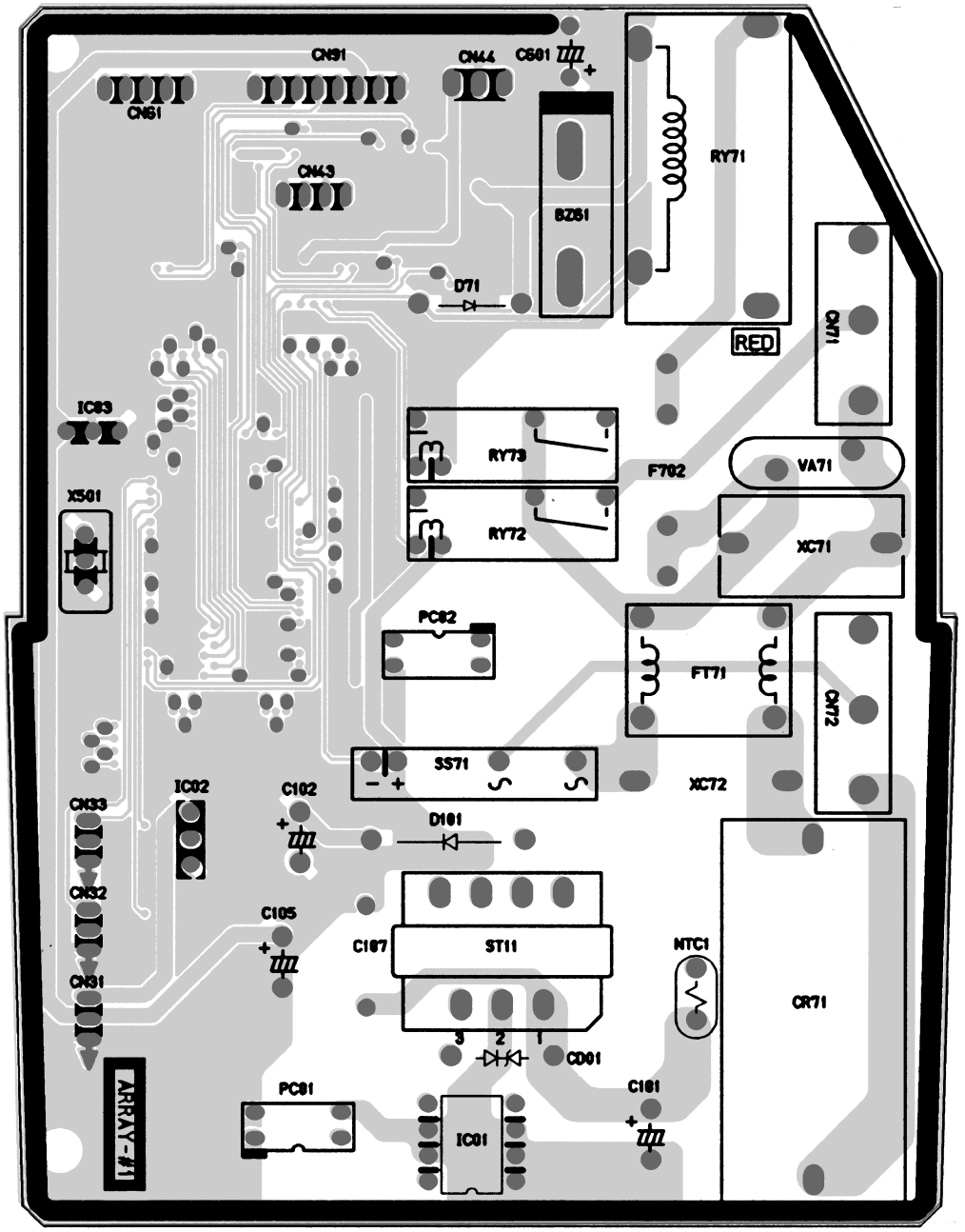
# 9. PCB Diagram

## 9-1 ASS'Y MAIN PCB(7K/9K/12K) : DB93-02447A

■ TOP



## ■ BOTTOM


CN91
CN44
C601
CN61
CN43
BZ61
RY71
D71
RED
CN71
IC03
RY73
F702
VA71
X501
RY72
XC71
PC82
FT71
CN72
SS71
XC72
IC02
C102
CN33
D101
CN32
C105
C107
ST11
NTC1
CN31
CR71
3
2
1
CD01
PC81
C101
IC01
ARRAY-#1

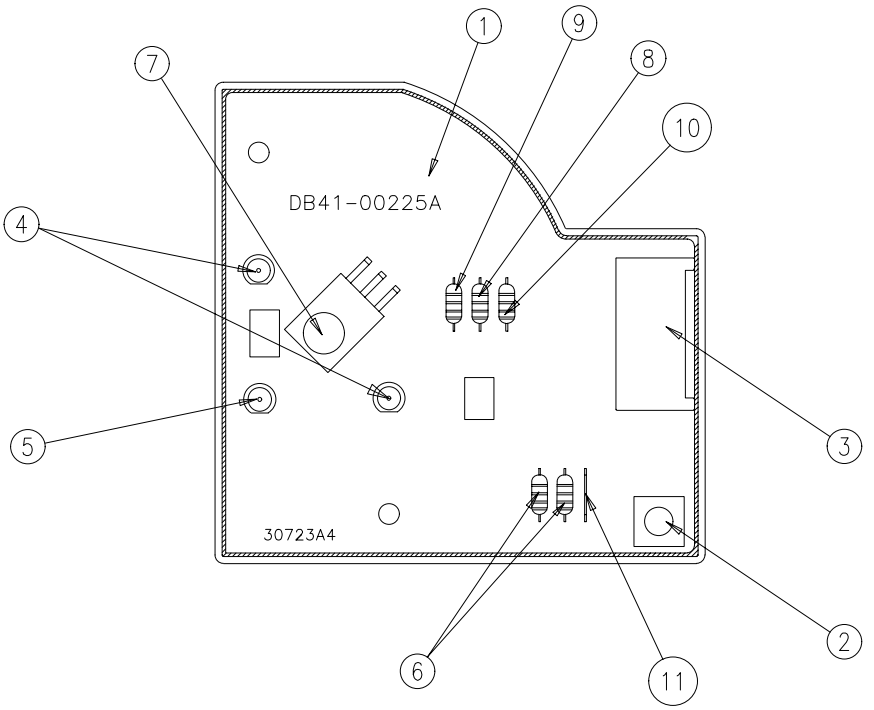
■ **Parts List**

| Location No. | Description | Specification | Q'TY | Remark |
|---|---|---|---|---|
| D71 | DIODE-RECTIFIER | UF4007,1KV,1A,DO-41,TP | 1 | SNA |
| D102 | DIODE-RECTIFIER | UG2D,200V,2A,DO-204AC,TP | 1 | SNA |
| BD71 | DIODE-BRIDGE | DF06S,600V,1A,SMD-4,TP | 1 | SNA |
| D101 | DIODE-ZENER | BZX84C3V6,3.6,350mW,SOT-23,TP | 1 | SNA |
| D103 | DIODE-ZENER | BZX84-C11,10.4-11.6V,350mW,SOT-23,TP | 1 | SNA |
| CD01 | DIODE-TVS | ST02D-200,185/200/215V,200W,DO-214 | 1 | SNA |
| Q201,Q401,Q601,Q603 | TR-SMALL SIGNAL | 2SC2412K,NPN,200mW,SOT-23,TP,1 | 4 | SNA |
| Q602 | TR-SMALL SIGNAL | MMST2907A,PNP,200mW,SOT-23,TP,100-300 | 1 | SNA |
| Q901,Q902 | TR-DIGITAL | DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP | 2 | SNA |
| IC05,IC08 | TR-ARRAY | 2003,NPN,7,1W,SOP-16,ST,1000 | 2 | SNA |
| PC01 | PHOTO-COUPLER | TR,130-260%,200mW,DIP-4,ST | 1 | SNA |
| PC02 | PHOTO-COUPLER | TR,50-150%,200mW,DIP-4,ST | 1 | SNA |
| IC51 | IC-EEPROM | 93LC56,128x16Bit,SOP,8P,150MIL,-,2.5V,-,PLASTIC -40to+85CC,1uA,CMOS,TP | 1 | SNA |
| IC03 | IC-VOLTAGE COMP. | 7533,TO-92,3P,-,SINGLE,-,-,PLASTIC | 1 | SNA |
| IC02 | IC-POSI.ADJUST REG. | 78L05A,TO-92,3P,-,PLASTIC,4.6 | 1 | SNA |
| IC01 | IC-PWM CONTROLLER | 255,DIP,8P,300MIL,PLASTIC,-0.3/700V,-,-40TO+150C 530mA,-,ST | 1 | SNA |
| NTC1 | THERMISTOR-NTC | 22Ohm,1.4A,3100K,9.5mW/C,-,7.0 | 1 | SNA |
| VA71 | VARISTOR | 560V,2500A,17.5x7.5mm,TP | 1 | SNA |
| R609 | R-CHIP | 560ohm,5%,1/8W,TP,2012 | 1 | SNA |
| R102 | R-CHIP | 100ohm,5%,1/8W,TP,2012 | 1 | SNA |
| R209,R501,R601,R603 R605,R908 | R-CHIP | 10Kohm,5%,1/8W,TP,2012 | 6 | SNA |
| R210,R211,R212,R301 R302,R401,R402,R404 R602,R604,R610 | R-CHIP | 1Kohm,5%,1/8W,TP,2012 | 11 | SNA |
| R103 | R-CHIP | 220ohm,5%,1/8W,TP,2012 | 1 | SNA |
| R405,R406 | R-CHIP | 330ohm,5%,1/8W,TP,2012 | 2 | SNA |
| R606,R909 | R-CHIP | 4.7Kohm,5%,1/8W,TP,2012 | 2 | SNA |
| R101,R607,R608 | R-CHIP | 470ohm,5%,1/8W,TP,2012 | 3 | SNA |
| R201,R202,R203,R204 R205,R206,R207,R208 | R-CHIP | 47Kohm,5%,1/4W,TP,3216 | 8 | SNA |
| R407,R408 | R-CHIP | 6.8Kohm,1%,1/8W,TP,2012 | 2 | SNA |
| R403 | R-CHIP | 6.8Kohm,5%,1/8W,TP,2012 | 1 | SNA |
| C107 | C-CERAMIC,DISC | 2.2nF,20%,400V,Y5U,BK,12.5x6mm,10 | 1 | SNA |
| C103,C105,C106,C201 C204,C301,C302,C402 C403,C501,C502,C503 C504,C901 | C-CER,CHIP | 100nF,+80-20%,50V,Y5V,TP,2012 | 14 | SNA |
| C401 | C-CER,CHIP | 1nF,10%,50V,X7R,TP,2012 | 1 | SNA |

■ **Parts List(cont.)**

| Location No. | Description | Specification | Q'TY | Remark |
|---|---|---|---|---|
| C202,C203,C404 | C-CER,CHIP | 10nF,+80-20%,50V,Y5V,TP,2012 | 3 | SNA |
| XC72,XC71 | C-FILM,LEAD-PPF | 100nF,10%,275V,BK,18x6x12,15 | 2 | SNA |
| CR71 | C-FILM,LEAD-PPF | 1.2uF,10%,450Vac,BK,38x18x30,3 | 1 | SNA |
| C102 | C-AL | 470uF,20%,25V,GP,TP,10x12.5mm | 1 | SNA |
| C101 | C-AL | 10uF,20%,450V,GP,TP,13x20mm,5m | 1 | SNA |
| C104 | C-AL | 470uF,20%,16V,GP,TP,10x12.5,5 | 1 | SNA |
| C601 | C-AL | 47uF,20%,50V,GP,TP,6.3x11,5 | 1 | SNA |
| X501 | RESONATOR-CERAMIC | 10MHz,0.5%,BK,8x3x5.5mm | 1 | SNA |
| BZ61 | BUZZER-PIEZO | 85DB,-,-,2KHz,- | 1 | SNA |
| RY71 | RELAY-POWER | 12VDC,0.9W,20000mA,SPST,20mS,10mS | 1 | SNA |
| RY72 | RELAY-POWER | DC12V,3A 250V AC,-,-,10mS,10mS | 1 | SNA |
| RY73 | RELAY-POWER | DC12V,3A 250V AC,-,-,10mS,10mS | 1 | SNA |
| SS71 | SSR | 12Vdc,-,2A,1mS,1mS | 1 | SNA |
| F702 | FUSE-CLIP | 250V,7.5A,30mohm | 1 | SNA |
| F702 | FUSE-CARTRIDGE | 250V,3.15A,TIME-LAG,GLASS,5x20mm | 1 | SNA |
| CN71 | CONNECTOR-HEADER | 1WALL,3P,1R,7.92mm,STRAIGHT,SN,BLU | 1 | SNA |
| CN72 | CONNECTOR-HEADER | 1WALL,3P,1R,7.92mm,STRAIGHT,SN,WHT | 1 | SNA |
| CN91 | CONNECTOR-HEADER | BOX,8P,1R,2mm,ANGLE,SN | 1 | SNA |
| CN61 | CONNECTOR-HEADER | BOX,5P,1R,2mm,ANGLE,SN,WHT | 1 | SNA |
| CN43 | CONNECTOR-HEADER | BOX,4P,1R,2mm,STRAIGHT,SN | 1 | SNA |
| CN44 | CONNECTOR-HEADER | BOX,3P,1R,2.5mm,ANGLE,TIN,BLU | 1 | SNA |
| IC04 | IC MICOM | S3C848AXZZ-QTRA,-,64P,+5V,10MHz,STM-0219-EA | 1 | SNA |
| ST11 | TRANS SWITCHING | EI1916-048,SS-P/J,-,200V~240V,-,-,EI1916,50/60Hz,-1.6mH(1P-3P),-,-,-,-,- | 1 | SNA |
| FT71 | COIL CHOKE | USAV-07153,UU1116,15.0mH,-25˚C~+85˚C,-,1.3ohm,-15mH,105,20x18mm,13,0.6,BK,-25˚C | 1 | SNA |
| - | PCB BOARD | FR-4 | 1 | SNA |

# 9-2 ASS'Y SUB PCB(7K/9K/12K) : DB93-02525A

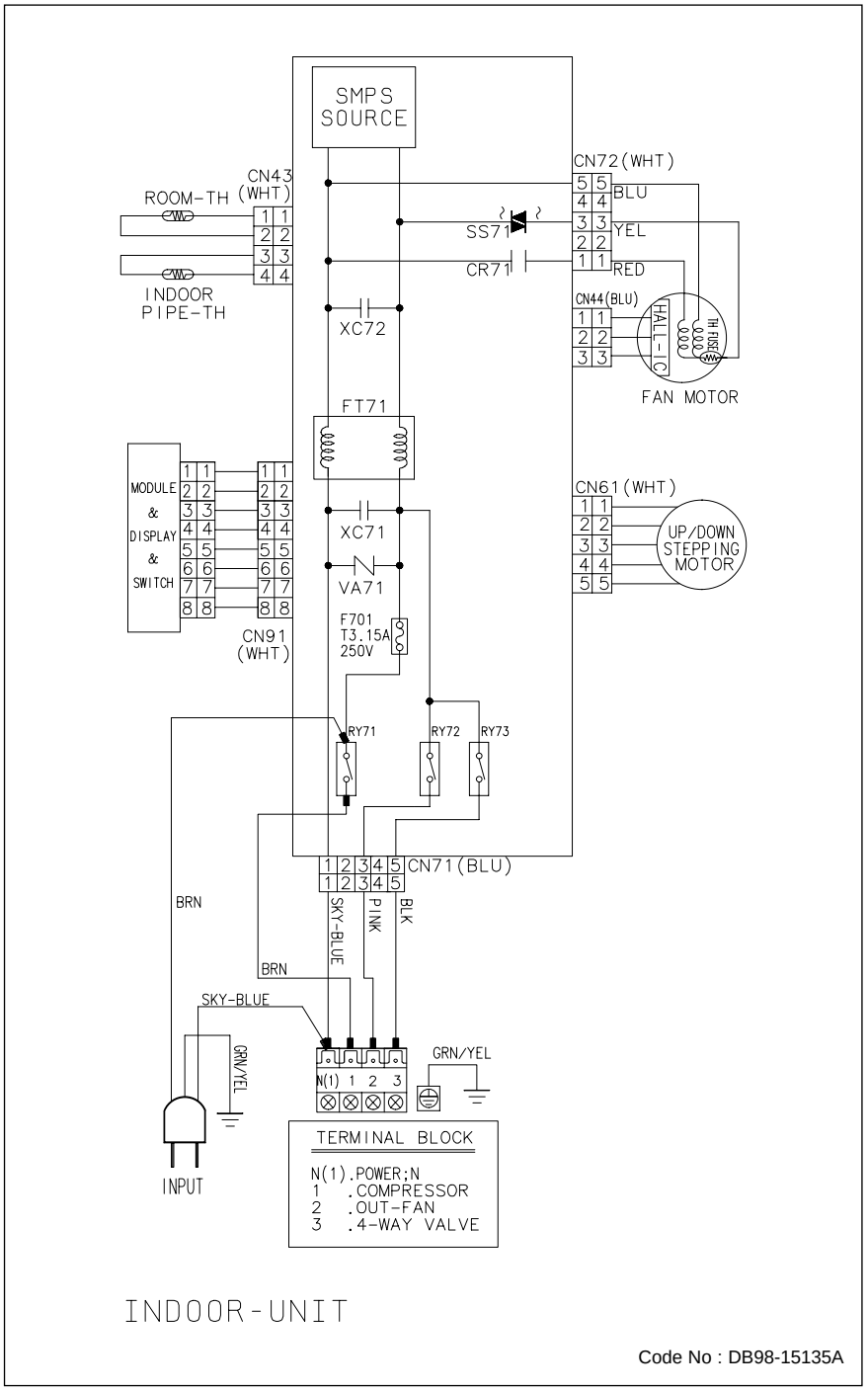



■ **Parts List**

| No. | Description | Specification | Q'TY | Remark |
|---|---|---|---|---|
| 1 | PCB-DISPLAY | FR-1 | 1 | SNA |
| 2 | TACT SWITCH | YTP-1280A | 1 | SNA |
| 3 | CONNECTOR | SMSW200-08(WHT) | 1 | SNA |
| 4 | LED-LAMP | GRN(SM3517) | 2 | SNA |
| 5 | LED-LAMP | ORG(SO3517) | 1 | SNA |
| 6 | RESISTOR | 470ohm,1/2W | 1 | SNA |
| 7 | MODULE REMOCON | FRP4021H10 | 1 | SNA |
| 8 | DIODE | 1N4148 | 1 | SNA |
| 9 | C-CERAMIC | 1nF/50V | 1 | SNA |
| 10 | C-CERAMIC | 100nF/50V | 1 | SNA |
| 11 | JUMPER | 10mm | 1 | SNA |

# 10. Wiring Diagram

## 10-1 Indoor Unit(7K/9K/12K)

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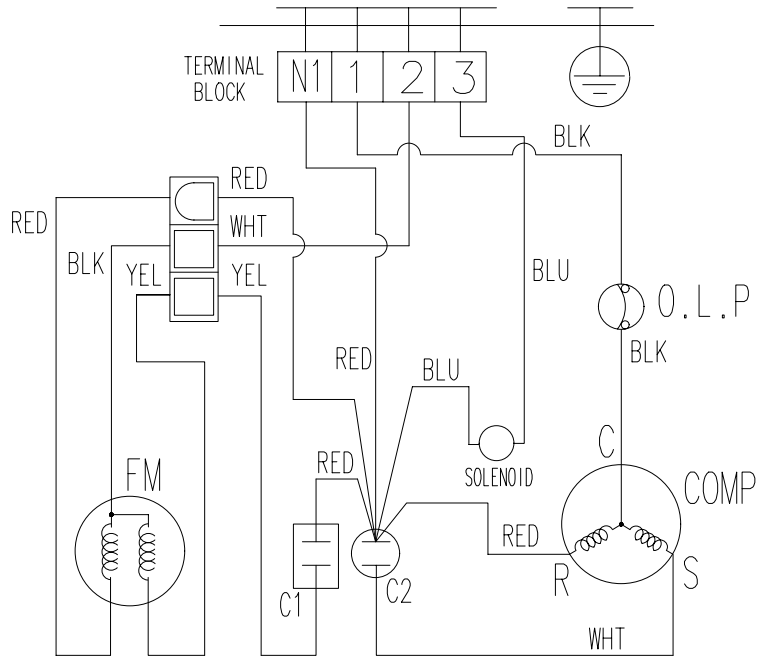


| | | | |
|---|---|---|---|
| C1 | MOTOR CAPACITOR | FM | FAN MOTOR |
| C2 | COMP CAPACITOR | O.L.P | OVER LOAD PROTECTOR |

Code No : DB98-15123A

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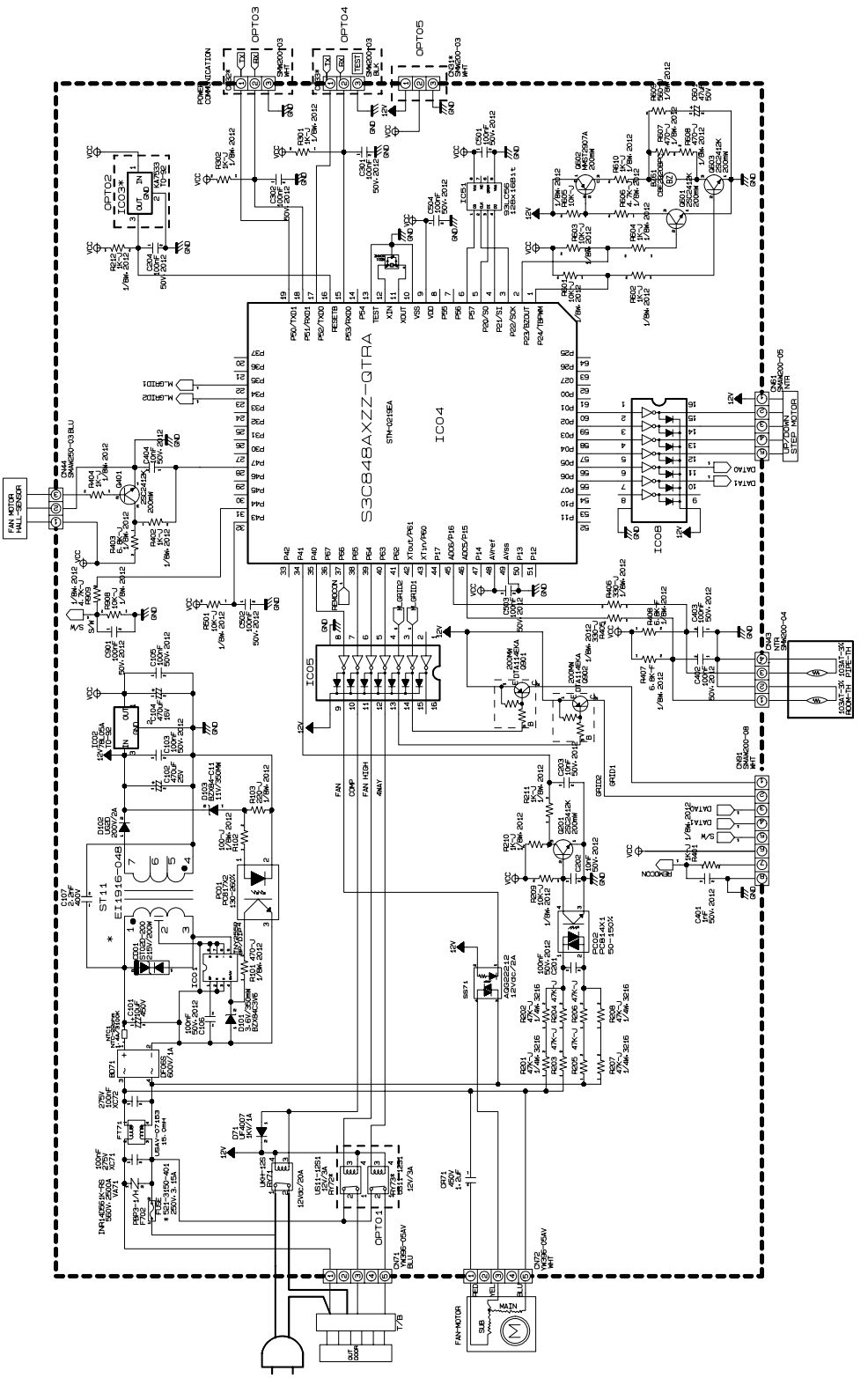
# 11. Schematic Diagram

## 11-1 Indoor Unit(7K/9K/12K)

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